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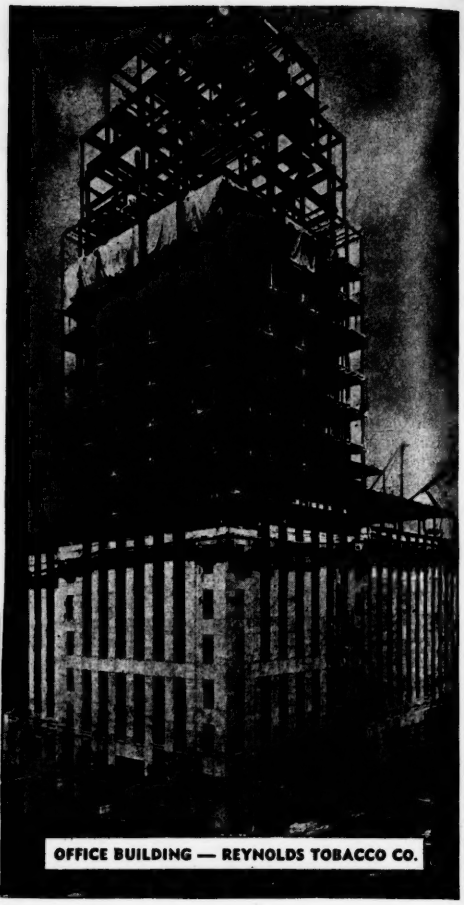

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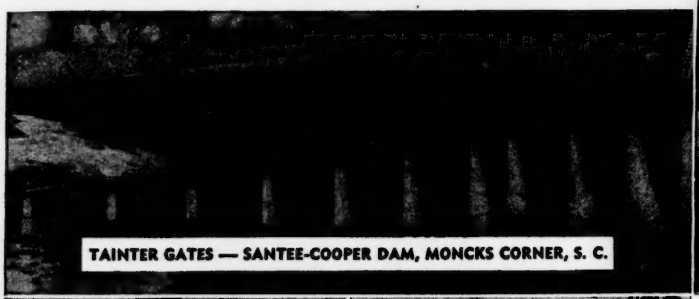

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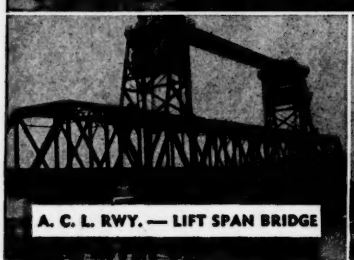

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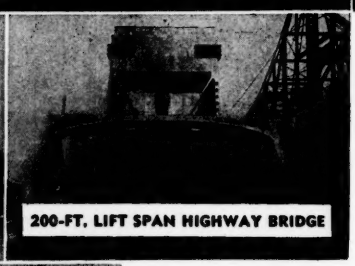

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"What Enriches the South Enriches the Nation"

Perversion of Government Functions

All of us, from the cradle to the grave, are consumers. We may be helpless babies or doddering ancients. We may be rich or poor, white or black, Christian, Jew or Atheist. It makes no difference who we are, we are all consumers. Even John L. Lewis is a consumer.

In view of the fact that as consumers we are 100% of the nation, and since the avowed purpose of a democratic republic such as ours is to secure and insure the greatest good for the greatest number, it seems a strange perversion of purpose for our government to divert its attention to scales of wages, prices and profits instead of centering it on productivity upon which all three depend. Productivity directed only by the law of supply and demand in a free market, a market governed by the needs and desires of consumers, will automatically establish wages and prices and profits.

It is not the business of our government to advocate higher wages for union labor nor even to suggest what any wages, any prices or any profits anywhere at any time should be. When it does it weights the scales of justice on one side or the other and must inevitably continue to so weight them by adding first to one side and then the other in an effort to keep those scales somewhere near in balance. Eventually the scales will collapse because of the burdens placed upon them and the free market place will become the bread line of slaves waiting for the dole from their governmental master.

This gradual process of loading the scales is just what has been happening in America. It did not begin with the sleight of hand tricks that were part and parcel of the New Deal. It antedated that mystic era of political legerdemain. It started when the changing conception of the duties of our government occurred in the minds of enough of our citizens to influence the selfish among our political servants. It changed when we began to look to our government not as vigorous, mature nephews and nieces think of their Uncle Sam but to look to it as spoiled brats look to a father, each one seeking special privilege for himself, as the favorite son.

The enactment of the 16th amendment (income tax) was the first concrete governmental expression of this changing attitude in the patriotic character of American citizenry. This amendment was the first step towards socialism in the United States. It placed the private affairs of the successful at the mercy of the mob and subordinated brains to numbers, quality to quantity. It pointed the way to political demagogy that is bound to lead to dictatorship or revolution unless its course can be interrupted and its direction changed by education, intelligence and the patriotic example and integrity of elected statesmen.

Men who love their country and place their duty to it above their selfish ambitions can and should lead for the benefit of all—for the benefit of consumers. Such a course ought to pay political dividends. The voters, if intelligent and conscientious, will vote as consumers too.

The Strike Situation

The strike situation is getting worse. The public will soon find it unendurable. The very night of the day that the conferences between management and labor began, striking employees tied up the public transportation system in Washington itself. Employers, squeezed between OPA regulations and the degeneration of collective bargaining into collectivistic badgering, are stalemated. Labor bosses, riding the crest of a wave of despotism, are admittedly bent upon strengthening and perpetuating their intrenched power. The government after fomenting unrest through ill-advised legislation and irresponsible public utterances, appears unable or unwilling to go beyond the subterfuge of using wartime authority to seize peacetime private property, completely disregarding the facts that seizures are not settlements and that the war emergency is at an end.

There are many indications, however, that a day of reckoning cannot be long delayed. The nation, with public welfare at stake, is showing unmistakable signs of impatience. For the first time during his incumbency the President is being deluged with condemnatory mail. These letters accuse him of showing lack of fortitude and decisiveness. Congress had felt this impact of popular protest much earlier. Both the President and Congress are aware that the public wants strike curbs but neither has come out with a resolute policy aimed at accomplishing this end. The Senate is still withholding from committee consideration such proposed legislation as the Industrial Relations Act, sponsored by Senators Burton-Ball-Hatch even though features contained in this measure have merit and deserve sincere consideration.

It may be that both branches of government are withholding action through faith in the current conferences between management and labor. Until these are completed and their results appraised it would be inopportune to assume that they will not achieve their goal. On the other hand it would be unwise to place too much faith in them in advance. The meetings face heavy traditional obstacles. Similar negotiations called by President Wilson after World War I failed dismally. More recent parleys between heads of business and labor have developed highsounding agreements on principles. But they have not stopped strikes.

If the conferences succeed in ironing out some of the differences between management and labor, it seems obvious that the full benefits from such an achievement can only be made permanently effective by supporting legislative action. Without such legislation agreements reached in conference can be abandoned at will by either party should they deem it expedient to do so. There is a definite pattern such legislation should follow. A sure approach would be to wipe all present labor relations laws from the book and start anew. New legislation could then be kept free from the mistakes of the past. The laws that apply to business can and should be made to apply to labor as well. The concept that sets American workmen or any segment of the population aside in a class to themselves is incompatible with the principles of democracy.

Recognition of the rights of employers and of the responsibilities of labor are prerequisite for permanent success of such legislation. Only through this recognition can the public welfare be adequately protected. Unless free enterprise is to yield completely to state domination, individuals must be protected in their right to work where and when they will and employers must be protected in their freedom to direct unhampered the management of their businesses.

To many politicians these suggestions will not be welcome. Those committed to a policy of ever-increasing government control see in present conditions an impasse, relief from which can only be had through government seizure of plants. Persistent seizures can easily become translated into accepted procedure in the public mind with eventual retention on the grounds that in no other way can industrial conflict be avoided. Other politicians will tremble at the political implications involved. They will resort to further legislative shadow boxing to dodge the issue as long as possible. How long this will be depends upon the speed with which the rising tide of public indignation comes to a climax.

"Freedom from Fear"

There is at least one American citizen (and of course there must be many more) who gets downright mad and can work himself into a nervous lather every time he thinks of the slick slogan "freedom from fear" that was foisted on a nation at a time when its emotions had dulled its reason.

"Freedom from fear!" In all conscience we ask freedom from fear of what?

Physical fear? Then let us immediately outlaw competitive sports and wipe out such death dealing machines as automobiles, locomotives and airplanes. Wipe out all dangerous animals, reptiles and insects.

Spiritual fear? Then let's make Mohammedanism our state religion. Its paradise is a marvelous place where everything is free.

Fear for the welfare of our loved ones? Then let's legislate against love and kindness and friendship.

Fear of authority? Then let's destroy in turn the authority that has banished all other fears from our lives.

"Freedom from fear" has a pretty sound. But can anyone admit that it is other than a catch phrase that means absolutely nothing.

Show us a man who has "freedom from fear" and you will show us a man who is mentally unbalanced or a sot drunk to the point of stupefaction.

Show us a man who has known fear and faced it and you will show us a man of courage and determination. Show us a man who has been shielded from fear and you will show us a weakling and a coward.

Ambition and fear are the whip and the spur that urge men on the road to accomplishment.

Progress of the South as Compared with That of Other Sections*

By

M. P. Callaway

Trustee
Central of Georgia Railway

PEOPLE ignorant of what has been accomplished, and at what great odds, or blinded by prejudice, quote comparative figures in an effort to show that the South lags behind some other sections of the country in per capita wealth, in money spent on education, in advancement in methods, in soil conservation, and other phases of economic life, and charge that this is due to the lack of energy and enterprise, and unwillingness to take advantage of opportunities on the part of Southern people.

Others, find other causes, but join in the chorus in calling upon Southern people to "wake up."

This always irritates me, because in the face of history, by ignoring, or not being aware of what has been overcome and accomplished and how far we have really come, they blame when they should praise.

They completely overlook, or ignore, or perhaps are ignorant of, the truism so clearly stated by that wise old Chancellor of the University of Georgia, Dr. Barrow, that "our progress is measured not by where we are, but by where we came from," and, I propose to show how far we have come, and from where we came.

Just 75 years ago, 10 years of war between the States and of so-called "reconstruction," left the South prostrate and wrecked. Its young men, and many even of middle age, dead, or wounded, or broken in health; stripped utterly of its money, of its wealth, so much of which was in its slaves; its farms and plantations disrupted, and denuded of their horses and cattle, and even seed for planting, with countless homes destroyed.

Its share of the National wealth reduced from around 40% before the war to around 14% in 1870. Having 33⅓% of the area, it had 40% of the wealth of the Nation. Think of it, reduced from 40% of the wealth of the United States to 14%, from two-fifths to one-seventh, 65% of its entire capital wiped out at one blow.

We were an agricultural people, and our economy was based on it. Particularly so, of Georgia, Alabama, Mississippi, Louisiana and Arkansas—the Deep South. Agriculture had drawn into it a greater part of our investments, including that in slaves. Why, the value in 1864 of the slaves freed in Georgia alone was greater than the bank deposits of Georgia and Alabama combined have ever amounted to at any one time in any one year since 1864, until 1940, when they caught up.

With accumulations of 200 years swept away, with no money and no capital, the survivors, largely older men, women and children, started over again, not only from a financial standpoint, but with a new way of life to learn, economically, politically, domestically, socially.

Where, in any country, have a people done so much as our people here in the South have done in these 75 years.

And yet, using unfair statistics, based on comparisons of unlike things, we are compared to our discredit with sections which have never been devastated by war,—on the contrary, have profited largely by war.

We are compared on a population basis, with a people in other sections almost all white, in many sections predominantly industrial from the early days of the country, with all of their accumulated assets and savings and knowledge from the very beginning of the country, intact.

No allowance is made for 35% of our population being of a different race, which, while it has made substantial progress, started upon being freed 80 years ago, with no property, no education, no training in thrift. And yet, to get the comparative figures, they are all counted head for head with people of other sections who have been accumulating all of these things for 300 years.

No allowance is made for any difference whatever in conditions, making such statistics unfair and misleading. Of course our per capita wealth, and the methods and conditions which are created or governed by wealth, are not as great. Of course our Southern States, and particularly those of the "Deep South" stand below States which have had 300 years of uninterrupted progress. We have had 75 years of badly interrupted progress.

And yet, because we have not in 75 years made up for the loss of the accumulations of 200 years, and, in spite of all these handicaps, gone forward to equal those other sections with their 300 years of accumulations, we of the South, are condemned as a whole people, and called poverty stricken and shiftless, and referred to as the Nation's problem. It is a cruel slander.

Following the war, with labor and experience centered on cotton, and a market and ready sale for cash confined practically to cotton, cotton continued to be the one principal crop. In spite of low prices when there was a big crop, some times as low as four cents, a smaller crop at six cents, and a poor crop at ten cents, our people, nevertheless, struggled on, and up. Conditions improved, schools improved, roads improved; manufacturing, particularly of cotton, began in a small way, and grew tremendously.

Around 1915, the boll weevil struck Alabama, and advanced across Georgia. In Alabama, production of cotton came down from 1,731,751 bales in 1914 to 520,906 bales in 1917. In Georgia, production was 2,723,094 in 1914. By 1923 it was down to 612,812 bales. I will not go into figures, as many of you remember those conditions, but it

(*Continued on page 66*)

* Extracted from an address delivered by Mr. Callaway at Dawson, Ga., entitled "Progress of the South as Compared with Other Sections."

Gum farming is an important activity on many woodlands throughout the South. Farmers in off seasons find time to chip even small numbers of trees on their farm. The boys are watching a demonstration of the proper method of installing more tins and hanging cups.

Trees as a Crop in the South

by

H. J. Malsberger

Forester,
Southern Pulpwood Conservation Association

FARMERS living in the ten southern states comprising the working territory of the Southern Pulpwood Conservation Association own about 41 percent of all the privately-owned forest lands in this region. Individual acreage per farm is small, averaging about 35 acres. But in the aggregate this farm woodland ownership amounts to 70,000,000 acres. Over 2,000,000 farm owners control this large segment of the South's third most valuable resource.

Proper care and treatment of all forest lands, regardless of ownership, is of vital necessity to assure continued operation of existing wood-using industries, provide for an expansion, and safeguard the public welfare. The treatment accorded the farm woodland will contribute nearly 50 percent to the success or failure of maintaining the wealth obtained from our forests in the form of products, game and fish, water control and recreational values.

A great deal of the mistreatment of the forests is due to a misunderstanding or lack of complete knowledge of the conditions and factors required to grow timber. People, generally speaking, do not realize that timber can be grown as a crop, that forests are a replaceable natural resource, and that they are destroyed by attemping to "mine" them as an ore. Larger timberland owners can employ foresters to manage their timberland so that the forests will yield continuous crops of timber. Others can employ consulting foresters to perform the same service. This is usually financially prohibitive for the small woodland owner.

Public forestry agencies recognize the need of providing simple forest management services and information to the small owner but lack of adequate funds and personnel prevent them from doing a complete job. The millions of owners to be contacted and the small individual acreage to be served takes time and is expensive but nevertheless especially desirable.

The vocational forestry training camp for farm youth is an educational activity aimed at exerting the right kind of influence on the treatment of our forest resource. These boys do not learn professional forestry. They learn the practical things needed to make an asset of their woodland rather than a liability. This is all the training possible to be given in the one or two weeks' camp undertaken in this project.

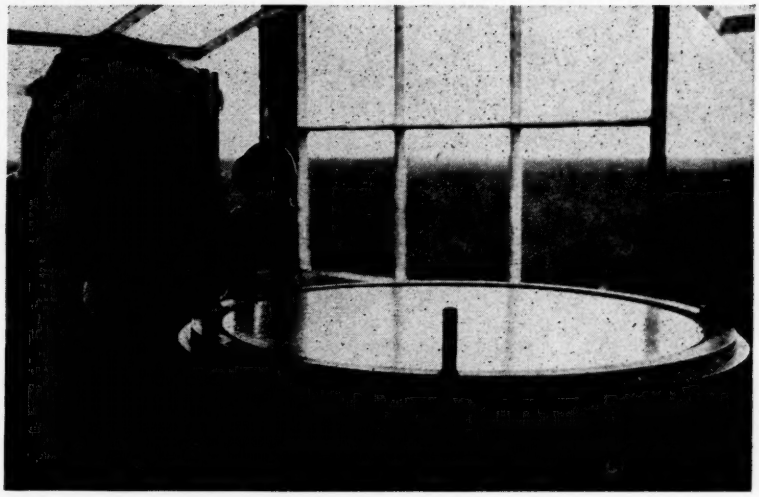
Forestry training camps are not new in the South, several states having conducted them in the past. However, this program, sponsored by the Southern Pulpwood Conservation Association, for its member pulp and paper mills in the South, is the first industry attempt to spread this activity on a regional basis. The project is offered to those states not now engaged in a similar

activity. It contemplates the approval of those agencies and their active participation.

In most states some vocational forestry is now included in the farm-youth program. The vocational agricultural departments and the 4-H club division of the extension services are requested to select boys to attend camp who have performed outstanding work in their respective programs. The State forestry departments agree to contribute the teaching staff from their technical organizations. Some State agency provides the camping facilities and staff to provide for from 50 to 100 boys for a one or two-weeks' camp. The Southern Pulpwood Conservation Association assists in making these arrangements and its member mills and sometimes non-member mills finance the complete cost of the camp.

The subjects presented at such camps, depending upon their duration, include forest fire prevention and control, tree identification, proper selection of ripe trees to be cut for a specific purpose, selection of trees to be thinned such as diseased, defective and deformed, and how to estimate the amount of wood that can be cut from standing trees and a determination of its value. These practices enable the farm youth to protect his woodland from the destructive enemy — uncontrolled fire—which kills seedlings, keeping his forest only about 25 percent productive, as well as destroys saplings and ripe trees.

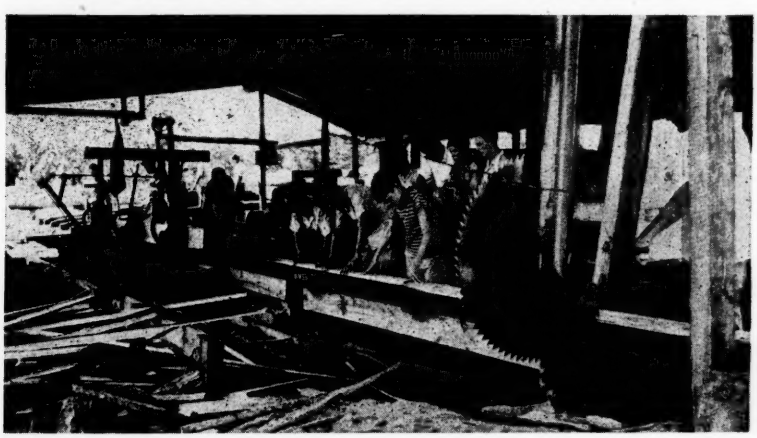
The boy also learns how to judge the trees which should be cut with an idea of their value. This is important to assure a fair return for the quantity as well as quality of the product being sold. All these activities actually show the boys that timber can be cut properly for a nice profit and still leave a supply for future growth and future income. One of the main objectives of these camps is to dispel the mistaken idea that it pays to cut all the timber at one time as long as the owner intends to grow trees on that land. Clear cutting followed by immediate replanting may be necessary in stands of overmature timber. Even this practice, however, removes the desirability of having smaller but periodic income over a period of years.



Above—A boy locating a forest fire with an aliadade and map on a tower table. Forests protected from fire have 80 to 100 feet steel towers located at approximately 16-mile intervals. They are manned day and night during the peak fire season and fires can be observed when they are about a quarter of an acre in size.

The Southern Pulpwood Conservation Association and its member mills have as their ultimate objective providing this type of vocational forestry training to a thousand farm boys each year. The industry knows that the operation of 50 mills in the South depends upon a constant supply of wood. They further know that when some 180,000,000 acres of privately-owned timberlands in the South are growing full crops of timber instead of the current 25 to 50 percent there will be an adequate supply of wood for all wood-using industries. A small army of farm youth over a period of years will have learned how to care for and treat their woodlands. The practical forestry aids taught in the camps will enable the boys to increase their profits from the woodlands and keep on growing more timber.

Below—Farm boys learning how to operate a semi-portable saw mill. On the log side of the mill, the boys are being shown how to cut the log to obtain the highest grade material. The program aims to teach practical knowledge needed to make the woodland an asset rather than a liability. Subjects presented at the camps depend on duration of the sessions, and include forest fire prevention and control, tree identification, proper selection of ripe trees to be cut for a specific purpose, selection of trees to be thinned and how to estimate the amount of wood that can be cut from standing trees and its value.

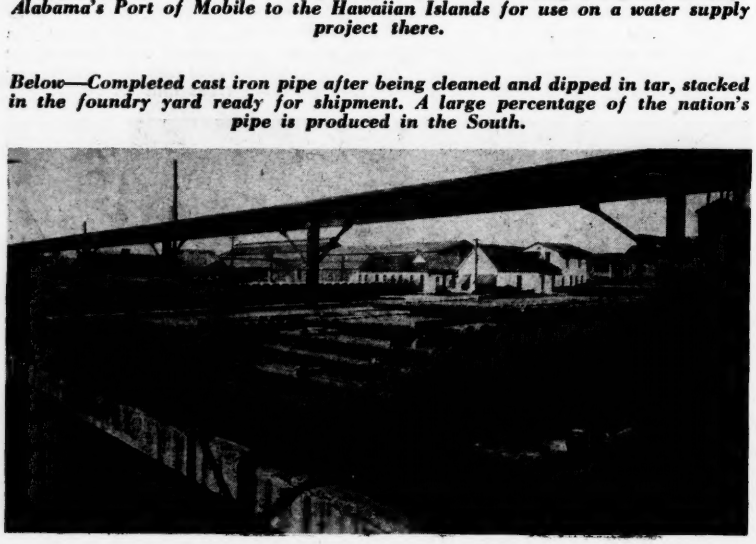


Birmingham Prominent as Center for Cast Iron Pipe Production

Above—A solid trainload consisting of 58 cars of 42-inch cast iron pipe weighing 2,508,380 pounds being shipped from a Birmingham plant through Alabama's Port of Mobile to the Hawaiian Islands for use on a water supply project there.

Courtesy Frisco Lines

Below—Completed cast iron pipe after being cleaned and dipped in tar, stacked in the foundry yard ready for shipment. A large percentage of the nation's pipe is produced in the South.



BIRMINGHAM, ALA., occupies a prominent position in the cast iron pipe industry with four major manufacturers located in the Magic City. These firms are: American Cast Iron Pipe Co., United States Pipe & Foundry Co., National Cast Iron Pipe Co. and McWane Cast Iron Pipe Co. Although these plants had partially retooled to manufacture naval and artillery shells, they continued throughout the war to produce cast iron pipe without which no city would have gas mains or a water supply and no chemical plant could function.

It is often said, the story of cast iron pipe is the story of civilization since water supply is an index of

civilization. Over 95 percent of water pipe in the 15 largest cities in the United States is made from cast iron.

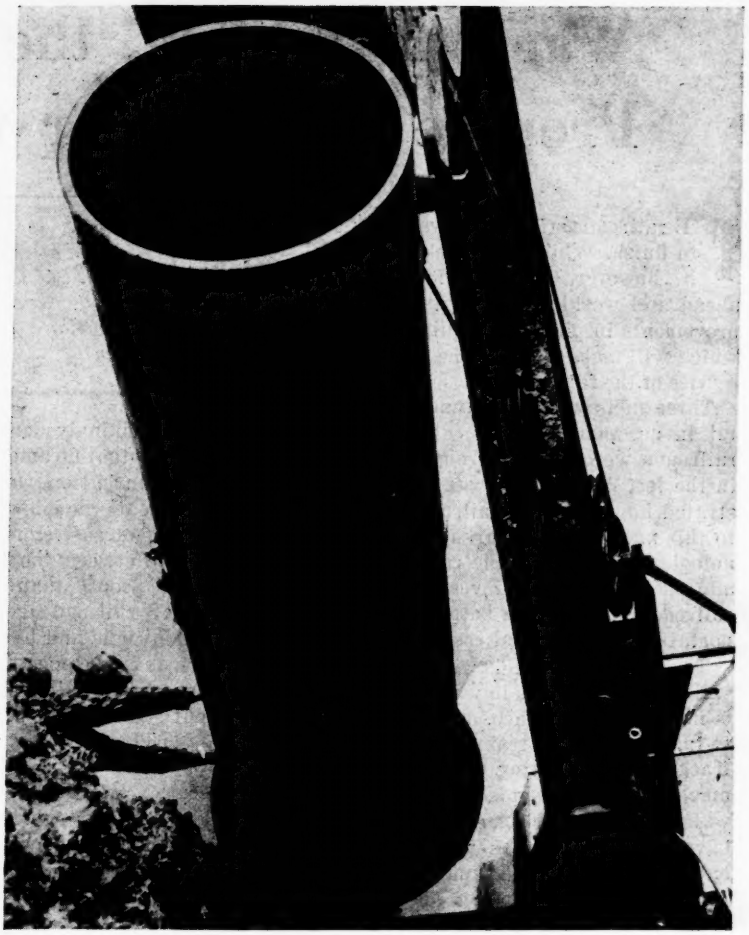
Cast iron is a product of the Far East. Confucius, the Chinese philosopher, and scientists who lived about 300 B.C., is said to have smelted iron in a furnace not unlike the modern blast furnaces and to have cast the resultant metal into useful tools and implements. From then on cast iron was used for many purposes. In 1400, cast iron was introduced in Europe, and 100 years later the modern blast furnace was invented in France.

In 1664, King Louis XIV constructed the first known cast iron pipeline. This line supplied water to the fountains at Versailles and at the beginning of World War II was still in service. Germany, Belgium and England quickly followed this example with cast iron pipelines for water. In the nineteenth century cast iron pipe entered America. Although Weymouth, N. J., is supposed to have produced cast iron pipe as early as 1810, the oldest pipe on record was cast in England and laid in Philadelphia in 1819.

The principal advantage of cast iron pipe is its high resistance to corrosion and long life. This inherent quality of cast iron pipe to resist corrosion has long been appreciated by chemical and other manufacturing industries encountering unusual corrosive problems.

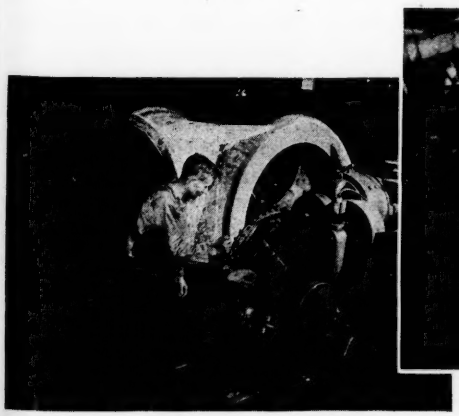
Advances in the art and science of cast iron pipe manufacture, particularly in the last decade, have greatly improved the physical properties of pipe and have opened up much wider fields of application. Cast iron pipe today is being used in many places where a few years

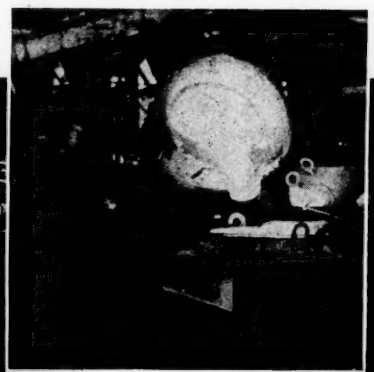
(*Continued on page 72*)

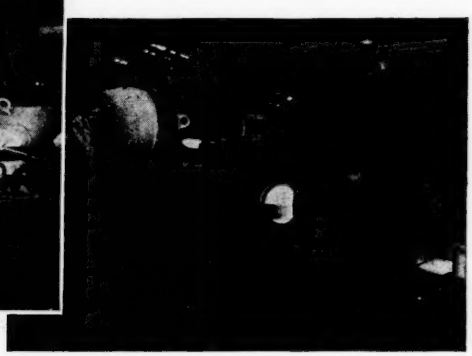


Above—Cast iron pipe from Birmingham has been shipped the world over. This 48-inch section was laid in a ditch to become part of a great city's water system.

Below—At Left—All types and shapes are cast in Birmingham. This joint technically known as a 42-inch Bell-Bell-Bell and Flange Cross is being given the final touches with a grinding machine. Middle—Molton iron used in making cast iron pipe is about to be poured from the crucible into the casting ladle. At Right—After the casting ladle receives its load it is inserted into the spinning mold, where centrifugal force throws the molten metal against the walls. The mold continues to spin until metal cools enough to freeze.







War Job Ending, the Railroads Prepare Further for the Future

by
John J. Pelley
President
American Association of Railroads

THE railroads still have a war job to finish. While they are doing it, however, they are looking ahead and working toward the improvements in plant and equipment which will make possible the better service of the future.

Three facts which are fundamental in assessing the future of the railroads were clearly brought out in the test of war. The war demonstrated how essential railroads are to this nation, the remarkable technological progress of the railroads, and the importance of investment in railroads in providing better transportation at lower real cost.

The first of these facts will remain valid in peacetime as in war. There is nothing in existence, or in sight, to take the place of trains of cars on tracks in transporting the vast volume of American commerce at rates which now, and for some years past, have averaged less than one cent for hauling a ton of freight a mile.

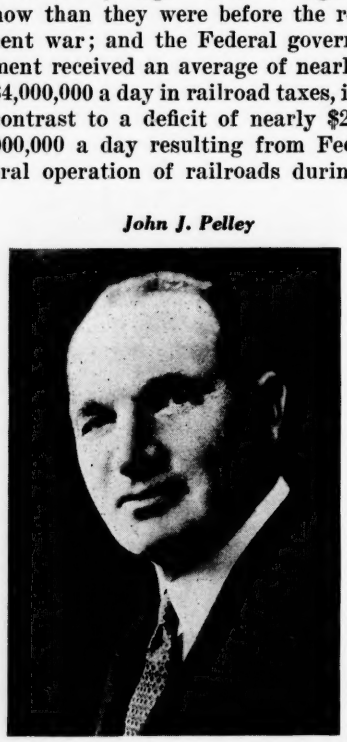
Technological progress demonstrated by results during the war will continue in peacetime at an accelerated rate. Much of this progress will not be conspicuous, for that is the way with most changes in railroading. To the naked eye, for example, steel rail rolled today looks about the same as ever, but, as a result of research, it actually has a rate of breakage per year of service only about one-fifth as high as that of rail rolled only fifteen years ago. That is but one detail in the composite picture of progress which enabled the railroads, in this war, to do twice as much work per day with nearly one-third less equipment and to do it immeasurably better than during the first World War.

The research which made such results possible is going ahead today on a broader front than ever before. Individual railroads, the companies which supply the railroads with equipment and materials, and the technical divisions and study committees of the Association of American Railroads, all are engaged in the search for better ways to carry on the railroad business.

The third fact strikingly demonstrated by the war is that no amount of ingenuity and invention would have been enough to do the job without the investment of vast sums in better railroads. Between the two wars, considerably more than ten billion dollars of railroad money was spent for additions and betterments to plant and equipment. In that period, the average railroad investment went up from about $10,000 to $20,000 per man employed.

Largely because of the better "tools" provided by this doubled investment per worker, the men themselves received an average hourly wage double that of the first World War; the nation received better services at freight rates no higher now than they were before the recent war; and the Federal government received an average of nearly $4,000,000 a day in railroad taxes, in contrast to a deficit of nearly $2,000,000 a day resulting from Federal operation of railroads during the first World War.

John J. Pelley



Railroads are going ahead with their plans for further improvements in the alignment and structure of track, in signals and communications, in yards and terminals, in shops and offices, in operating methods, in every phase of the business. The changes most likely to attract attention, however, are those in locomotives and cars.

There are now on order about 1,200 new passenger coaches. These new cars, most of which are expected to be delivered in 1946, will feature smart, spacious comfort. They will embody desirable changes in design and materials suggested by pre-war experience with earlier streamlined cars, by the experimental service of new types of sleeping cars and coaches built just before the war, and by direct personal checking of the preferences of passengers and prospective passengers.

Trains will be pulled not only by the newer types of power, such as electric and Diesel locomotives, but also by improved steam locomotives, including both new designs of reciprocating engines and others driven by turbines. Just as the 1945 railroad is a machine very different from that of 1920, as is evidenced by its performance record, so the railroad of tomorrow will be different from that of today.

It is possible to say with assurance, therefore, that the railroad will continue to play its indispensable part in meeting the transportation needs of this country, and that railroads will continue to be improved through enlarged and accelerated research and invention, provided only that the investment which in the past has been so fruitful of better service at lower cost can be continued in the future.

The question of the future volume of rail traffic is important. The total production and exchange of goods in the country is expected to show a decline in the next few months, to be followed, it is hoped, by the upturn which should result from more

(*Continued on page 74*)

OPPORTUNITIES FOR ENGINEERING RESEARCH — IN THE SOUTH —

by
E. N. Kemler
Head, Research Engineering Division
Southern Research Institute

TIME was when changes were made slowly and cautiously. New machines were not designed but evolved from existing equipment through a long series of small changes, each an important contribution but representing only a small physical change. Much of our equipment today, such as the internal combustion engine, the steam engine and turbine, textile machinery and machine tools, to mention only a few, came up this long and arduous path of development. Except during recent years no research work was done and frequently little design work. Like Topsy, the equipment just grew.

Today we are faced with an increasing industrial tempo. We can't wait for things to develop at leisure or only when the spirit moves us. The rocket for propulsion, an academic dream for years, came into real usage almost over-night. To win a war required that it must be made a reality; we couldn't wait for it to evolve. As a result the problem was given to researchers who working with engineering and production groups according to an organized plan successfully developed equipment that met the most rigorous specifications of performance and weight. Unquestionably, the greatest accomplishment of all time in organized research is atomic power. This, too, has passed from the theoretical stage to actual reality in a short time solely as a result of organized research. These are outstanding examples of what research can do if facilities, personnel and objective are provided.

For engineering research as applied to small industries we must look to smaller problems, although they may within themselves be to the researchers equally exciting and to an individual company as important as atomic power is to us as a nation. The scope of problems available to small industries is limited only by the capabilities of the research staff and by the enthusiasm, vision and research-mindedness of the company in its support of and action on the results.

Dr. E. N. Kemler

Let us consider the things which distinguish engineering research from research in other fields. First, engineering is always concerned with getting things done at the moment, whereas pure science is concerned with finding as near the true or complete answer as possible at the time. The engineer usually has to meet a deadline or keep things going and therefore does not obtain the first or best solution, hence is continually improving things. Secondly, the pure science group is concerned with developing new processes or principles, whereas engineering is generally concerned with applying them. This application may involve the design of new machines, new processes or manufacturing methods. Finally, engineering research is frequently concerned with perfecting existing equipment or processes.

Engineering research within itself can be divided into basic and industrial or applied research. Basic research is concerned with obtaining general information for broad usage; whereas, industrial research is concerned with specific applications. The broad purpose of industrial research is to develop something which can be marketed at a profit.

In a small company where funds for research and facilities for manufacture are limited a careful analysis of research projects must be made. The projects must always be aimed at some practical goal since the ultimate objective of industrial research is a salable product. In order to accomplish this constant cooperation must be maintained between research, management, engineering, production and sales. While a new or improved product cannot satisfy all of these groups it must be designed so as to be economically produced; it must fit the basic type of equipment and personnel available in the plants so as to be producible, and finally it must be capable of being sold at a profit.

The subject we have under consideration is so broad and the possibilities so numerous that some limitation must be made on it. I propose to consider these manifold engineering research possibilities in three categories, namely, as they apply to homes of the South, raw materials of the South, and to industries of the South.

We are so used to thinking of research in terms of highly technical developments as applied to industry that its possibilities as applied to the home are usually overlooked. Research as applied to the home offers unlimited opportunities in providing better housing, in improving health and comfort, and in providing facilities and gadgets that will make the home a more pleasant place to be.

The development of improved housing is a national problem. Because of the rapidly improving standard of living in the South it now becomes, here, an opportunity rather than a problem. If by research we can provide, at the time, the best in housing we are acceler-

ating the living standards.

Our present housing has been brought to its present state of development by a large number of builders, craftsmen, and supply people contributing a little here and a little there. Developments have been without plan and spread of new ideas to other communities slow. The best and most economical use of new and existing materials have not always been made and construction has not always been of a type that best fits the local conditions.

Failure of research to play a more important part in housing has not been because of lack of interest by researchers, the public or builders, but because the problems are so broad and of such general application and benefit that financial support of research by an individual company is impractical. Because of regional differences in climate and social habits, housing research on a regional basis would seem to be practical. It could be carried out on a sufficiently broad scale either by large groups such as building contractors getting together as a regional unit and supporting a research program or by a group of manufacturers each building one or more essential elements of a house, pooling their interests insofar as research is concerned and jointly supporting housing research along definite lines.

Besides the broad type of housing research programs outlined, there are many opportunities for the individual manufacturer to develop, special products to fit local or regional conditions or his particular plant facilities. In cases where large manufacturers have backed their product through engineering and research, development of it has been rapid and when combined with sound sales promotional work the results have been astounding.

Today when you buy or sell a house one of the first questions asked is, "Is it insulated?" House insulations were largely developed and sold to the public only a few years before the war, yet today it is a major industry. Metal windows were a sorry piece of equipment when they first came out. Today engineering and research have developed them into a household accessory which will satisfy every requirement as to utility, eye appeal and service.

What you will be asking first in buying the house of tomorrow will depend on how much the building industry supports research, and on what this research develops. You might want double-glazed metal windows, a lifetime wood-shingle roof especially fireproofed and stained, lumber-treated to resist termites, plastic foundation materials, or any of a million other things.

Things that go into the home to reduce work, improve health and increase comfort are equally important to higher living standards. This field offers great possibilities to the small as well as the large manufacturer. We can get some idea as to the size of this potential market when we consider that there are more people engaged in housekeeping than in any other industry. It affects not only every one of us as a member of a household but also in our living outside the home through restaurants, hotels, etc.

DR. KEMLER is head of the newly created engineering research division of the Southern Research Institute of Birmingham, Ala. The new division will make available the integrated laboratories and personnel for carrying out investigations in mechanical and electrical engineering fields, which arise in connection with a sponsored research program. Dr. Kemler was connected with Dodge Manufacturing Corp., University of Pittsburgh, Gulf Research and Development Corp., Gulf Oil Corp. and Purdue University before assuming his new post. This is the first of two articles on the subject on Opportunities for Engineering Research in the South. It considers the possibilities as applied to the home in the South. The other will discuss southern raw materials and southern industry.

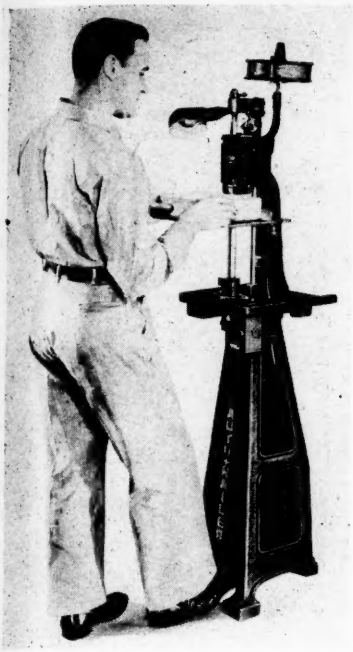
The housewife is always interested in new devices which decrease household drudgery. Any gadget which saves work or eases a monotonous job is welcomed and needed. One difficulty with household gadgets is that they perform only a single function that may require at most only a few minutes a day or week. The development of devices to do a multiplicity of functions such as a new washer advertised to wash clothes, wash dishes, and to peel potatoes offers interesting possibilities. Devices which reduce space requirements in the home such as a new ironer that folds up and can be rolled back into a closet until next needed, also are important since they ultimately result in smaller housing requirements, hence lower cost of housing.

The accelerated research for war during the past five-year period has developed many new principles which can be adapted to household uses. Food preservation, particularly as it can influence the farm home, is on the verge of radical changes. Lighting offers possibilities and necessity of developing better and new accessories and fixtures. Electronics as applied to home appliances is a virgin field. A few of the many other fields susceptible to research are improved heating, year-round air-conditioning, dust elimination, germ elimination, automatic laundry equipment, kitchen accessories, applications of new materials to new and old uses, improved sanitation and sewage disposal methods and equipment for small towns and rural homes.

The heat pump, i.e., so-called reverse cycle refrigeration, offers a broad field for development as a year-round air-conditioning device. If we just day dream on its possibilities we can visualize a home always maintained at the temperature convenient to the occupant the year round; dust precipitation equipment built in so that dusting in the home becomes a thing of the past and the hay fever victim can rest in comfort wherever his home may be; bacteria elimination devices and humidity control would make up the major accessories to an ideal heating and cooling plant. To reach this goal may be only a very few years away. When we get it depends on how aggressively utilities and manufacturers follow up research on it.

I have spent much time in discussing what you might consider at first thought to be a trivial outlet for research. Actually no other field is of more concern to us as individuals and offers such extensive possibilities for small as well as large manufacturers. Extensive research in the home and household appliance field can do much to make the home of the South the No. 1 home of the world.

They Said "It Couldn't Be Done"



Above—Full view of the Auto-Nailer, southern-born, southern-produced machine, which makes its own nails and in one stroke drives them.

BILL WILKERSON is a fellow who didn't like it when others told him it couldn't be done.

William H. Wilkerson is a person who believes that the things that can't be done can be relegated to the hell box of a weekly newspaper with lots of room left to spare.

That's why a new Southern enterprise with a glistening future was born. When research experts told Bill Wilkerson that it wasn't possible to perfect a machine that would make its own nails and then drive them, Wilkerson took his six-feet-two back to his own shop and set up a research department of his own.

Below—Auto-Nailer in action, helping turn out wooden toys.

From that evolved the Auto-Soler Company, with headquarters in Atlanta. Now there has been developed the Auto-Nailer. The new industry, figures evidence, is just getting into stride.

The Auto-Soler and the Auto-Nailer—the former designed for shoe-soling and the latter for wood-nailing, are, mechanically, almost the same machine. But both are unique. And both are Southern—Southern-conceived, Southern-developed and Southern-marketed.

It's an Horatio Alger story with the locale in Georgia, not New York.

Both the Auto-Soler and the Auto-Nailer make their own nails from an especially-knurled wire mounted on top of the machines. In one swift. quiet stroke, a nail is cut and driven, countersunk or flush. Nails can be driven at any desired speed up to three a second by depressing and releasing a foot pedal or by holding the pedal down while the machine produces and drives a continuous stream of nails, much in the same manner as a sewing machine.

These are the machines they told Bill Wilkerson couldn't be made. They are the machines that Bill Wilkerson is marketing throughout most of the world today.

The machines are powered by an electric motor which is controlled by the foot pedal. When the pedal is depressed the machine starts its downward stroke. A low projection on an arm in the machine contacts a feeder cam which, in turn, exerts downward force on a pawl. The pawl pushes a length of wire into shearing knives.

These knives are the heart of the machine. One side of the pair is stationary, the other is pivoted on a stud which permits it to swing from side to side. At the beginning of the downward stroke the movable knife is on the right side of its swing to receive the wire which is fed into it. As the machine continues its downward stroke a cam on the plunger contacts the upper projection of the movable knife and swings it to the left. When the knife is moved from right to left the wire is sheared off at an angle inside the pair of knives.

The result is a nail—a nail which is carried over and lined up with the driver hole in the knives. The driver, attached to the lower end of the plunger, travels down into the knives, pushing the nail out ahead into the work material.

Essentially, that's all there is to it.

But the Auto-Soler and the Auto-Nailer perform swiftly and automatically all the tiring, time-wasting jobs that have run up costs of cobblers, of furniture manufacturers, of wood-working shops.

Heretofore, light-nailing has been one of the most costly bottlenecks in furniture factories. High-speed saws, planers, jointers, shapers, borers batted out work, only to have it pile up on the production line waiting to be nailed—in the same way it was nailed back in the days of the hand plane, draw shave and adze, by hand.

The Auto-Nailer knocks a costly kink out of the production line. It's so simple and yet so effective that an executive of the Thomasville Chair Co. in Thomasville, N. C., commented: "An Auto-Nailer doesn't do a thing—except save us three men."

The machines are the result of Southern ingenuity, and a tribute to the fellow who insisted that research could solve a lot of the South's problems. Established in 1932 with an invested capital and surplus of $6,050, The Auto-Soler Company today has invested capital and surplus in excess of $175,000 and a production which last year reached $636,521.

Chief progress has come since early in 1944 when Bill Wilkerson set up a research department as a separate unit.

Since its establishment, the research department has developed a

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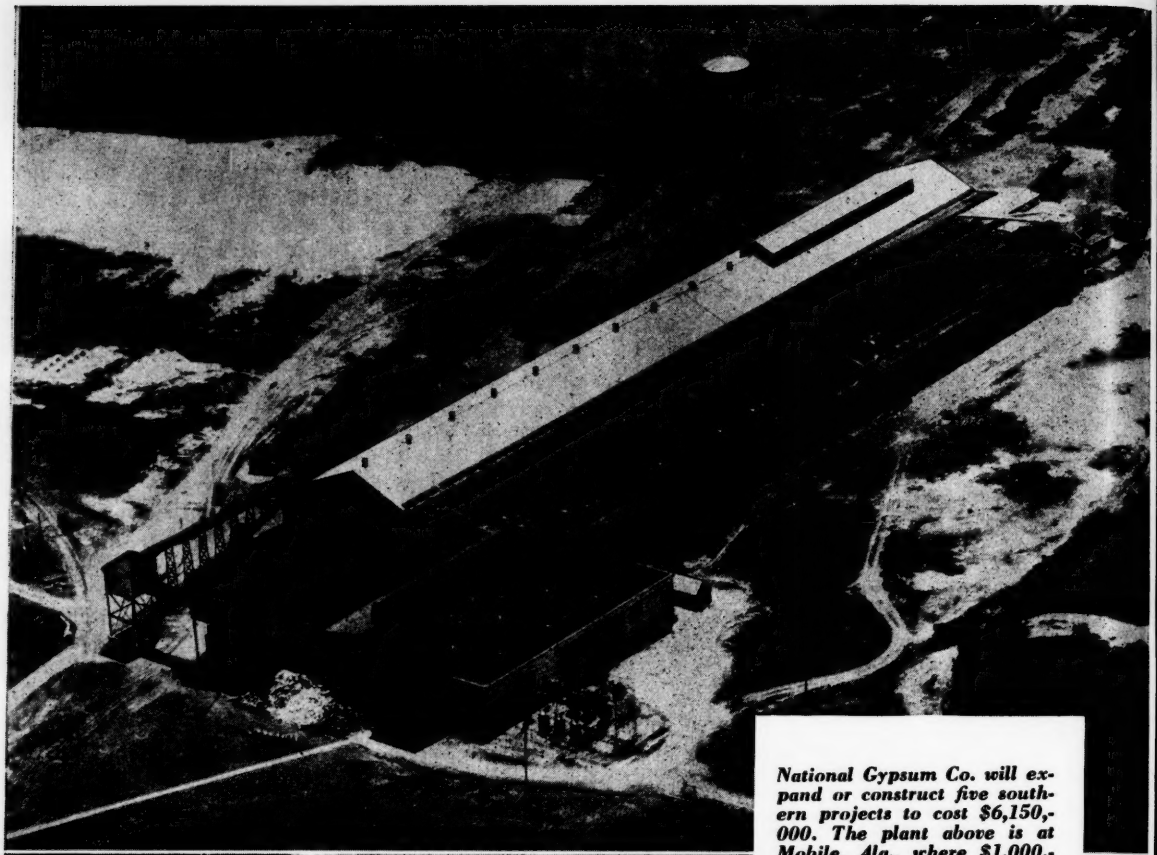
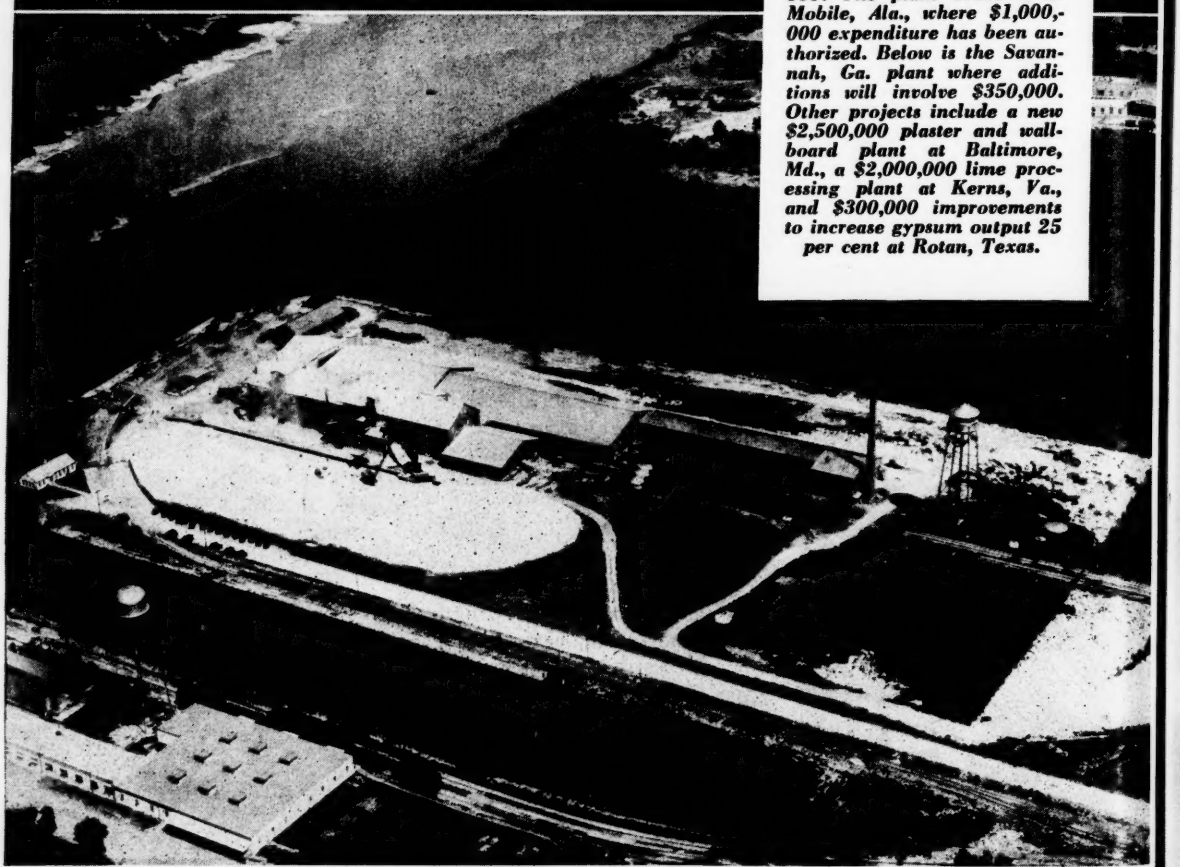
by

John Mebane





National Gypsum Co. will expand or construct five southern projects to cost $6,150,000. The plant above is at Mobile, Ala., where $1,000,000 expenditure has been authorized. Below is the Savannah, Ga. plant where additions will involve $350,000. Other projects include a new $2,500,000 plaster and wallboard plant at Baltimore, Md., a $2,000,000 lime processing plant at Kerns, Va., and $300,000 improvements to increase gypsum output 25 per cent at Rotan, Texas.

ALMOST THREE-QUARTERS OF BIG NATIONAL GYPSUM EXPANSION IN SOUTH

NATIONAL Gypsum Company's $8,500,000 post-war expansion program is now under way. Boom days for building material manufacturers are just ahead and the makers of Gold Bond products are extending their operations in order to help meet this demand.

Work already has been started in seven major locations where present operations are being enlarged and new plants are being built.

Over $2,500,000 is being invested in a gypsum plaster and wallboard plant on the Baltimore, Md., harbor. Completed, it will be the largest gypsum operation in the company's possession. It will exceed by 25 percent the present production capacity of the company's largest plant which is in the Bronx, N. Y.

In a six-kettle calcining mill, the rock will be made into stucco for processing into wall plasters and gypsum wallboard, lath and sheathing. The calcining, plaster mill and board plant will incorporate the most modern methods with the experience gained by National Gypsum during its 25 years of gypsum manufacturing.

All machinery and buildings on the new location have been designed by company engineers who are supervising the actual construction work.

Adjacent to the new plant, the Port Development Commission of Baltimore is financing the construction of a $1,500,000 pier which will include rock storage facilities. The pier will be used to unload the gypsum rock which will arrive by boat from the company's Nova Scotia quarries.

Another $2,000,000 plant to be devoted primarily to the processing of industrial and chemical lime, is being built in Kerns, Va. Two rotary kilns combining the latest and most efficient appliances will handle 500 tons of burned lime a day. Capacity of the crushed and fluxing stone machinery will approximate 3,000 tons a day. Mine facilities are being improved to support the capacity of the mill.

Building and machinery design is in the hands of company engineers. Bayard Magee, a member of National Gypsum Company's Production Department, is the resident engineer.

A total of $1,000,000 has been allocated to the Mobile, Ala., fiberboard plant to install new equipment for an improved production process recently developed by the company's Research Department. When installation has been completed the production capacity of the plant will be increased 30 percent. At the same time it will be turning out a product improved beyond the present quality of fiberboards.

The machinery for the new process was designed by the Engineering Department and the actual construction is under the supervision of S. David Skinner, resident engineer.

Additions to the Savannah, Ga., gypsum plant will involve the expenditure of $350,000. Completed, the production capacity of the plant will be increased 25 percent. Included in the plans already underway are additions to the plaster mill, warehouse, carloading facilities, board plant, boiler plant and rock preparation mill.

A 25 percent production increase at the Rotan, Tex., gypsum mill will cost National Gypsum $300,000. Increased machine capacities, new plant office, complete maintenance department, additional carloading facilities are included among improvements taking place there under the supervision of J. E. Irvin, plant manager.

Opening of a quarry and construction of a rock storage storehouse, together with improved crushing and screening equipment to meet the capacities of the new quarry at the Fort Dodge, Iowa, gypsum plant will cost approximately $330,000. A new manufacturing building as well as additions to the office and heating plants at the Niles, Ohio, metal lath plant are also underway.

When these new plants and improvements are in production, National Gypsum Co. will occupy a strategic position in every major building supply market this side of the rockies from Canada to the Gulf of Mexico.

Program includes $2,500,000 at Baltimore— $2,000,000 at Kerns, Va.— $1,000,000 at Mobile, Ala. $350,000 at Savannah, Ga. $300,000 at Rotan, Texas

A $5,000,000 backlog of orders already on the company books is tangible evidence of the volume of business that the coming building boom promises to this still young and fast-growing factor in the building field.

A light, strong gypsum wallboard was the basic idea upon which National Gypsum Co. was founded in August 1925. Manufacture of the new wallboard was begun on the site of the company's first gypsum deposit in Clarence Center, N. Y., where a plaster mill and wallboard plant had been built. Since those early days the organization has enlarged its operations to include a complete line of building products for walls and ceilings.

A total of 23 plants are now in the company's chain. In addition to those already mentioned, there are plants in York, Pa., and Luckey,

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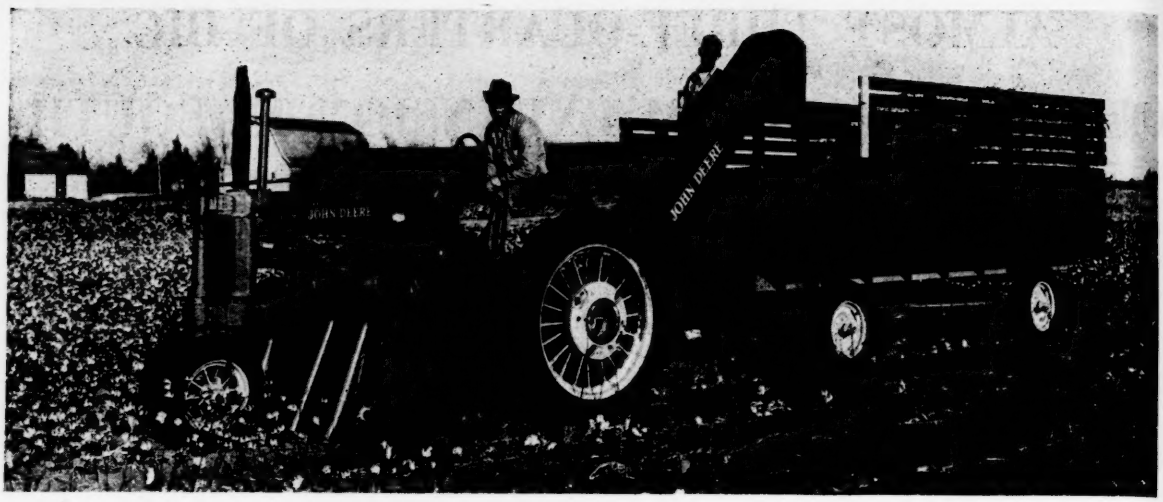


Cotton stripper operating in a defoliated Texas cotton field.

WHAT FACTORIES CAN DO FOR THE FARM —*a farmer's view*

THINKING of the farm in terms of grandpa's big dusty haymow and indulging in sentimental reminiscences of the old swimming hole obscures one of the biggest post-war opportunities for American industry, as the country reaches out for foreign markets but in some measure overlooks a potentially larger domestic market.

The modern American farm should be viewed as a "factory," in point of labor management, moving and manipulating materials and getting work done. One of the curious "blind spots" of American industry, both in farm and factory management, is that there is so little interchange of ideas between them. The farmer is, on the whole, more progressive and adventurous than the manufacturer and is reaching out for, and devising, makeshift home-made substitutes for types and designs of equipment that the machinery manufacturer does not produce.

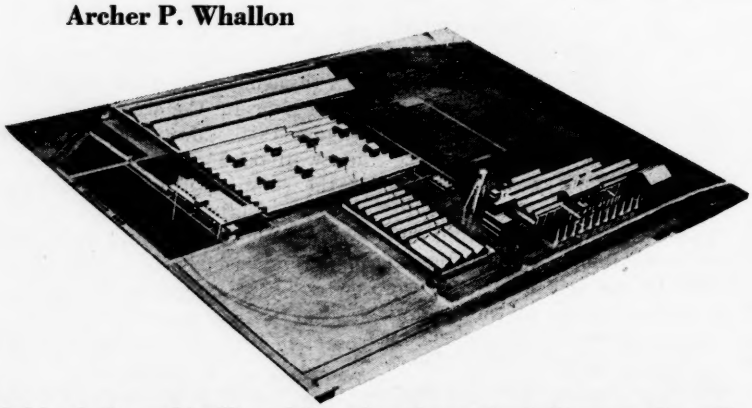
The manufacturer — particularly the maker of materials handling equipment—who continues to ignore the post-war farm market is missing the bus—the very vehicle that will take him to one of the biggest and best post-war opportunities.

The potential market for new and diverse types of equipment among American farmers is big because it remains undeveloped, is not saturated, and is still very far from the replacement stage. Despite all that has been written in praise of the supposedly efficient machine-using American farmer, in contrast with the alleged backward, brother-to-the-ox European "peasant," American agricultural engineering is singularly backward. Farm work is still throttled by many bottlenecks of primitive drudgery. But in mechanization the farm is rapidly beginning to catch up, and now is the time for manufacturing management, in its search for post-war products and markets, to make plans for participation in that acceleration.

This is most certainly not saying that war goods and machinery makers should indulge in a wholesale conversion of their plants to farm implement manufacture. That was the idea in Germany following World War One, when German industry, forced for a time, before the rise of Hitler, to cease munitions manufacture, turned to the farm equipment line. From Krupps down, German metal goods manufacturers sought recovery from their misfortune in the making of farm machines, and there were soon more types of grain binders and threshing machines made in Germany (a

by

Archer P. Whallon



Model of the multi-million dollar plant International Harvester Co. will build at Memphis, Tenn., where manufacture of many of its farm implements designed for use of southern farmers will be concentrated. The plant will produce the mechanical cotton picker, also pick-up hay balers, plows, harrows, cultivators, middlebusters and listers.

country approximately the size of Texas) than in the whole United States. Some of the larger German companies made a feeble attempt to enter the American market, but they found it difficult to meet American competition in their homeland, and their export activities never got much further than the printing of some English language catalogs.

American management should not make a like mistake. American farmers do not ask for, and there is no need for manufacturers to bring out more makes of tractors and plows, harrows, combines, and cornpickers —the field for ordinary farm equipment is largely preempted by the established farm equipment companies. The farmer needs new tools. It is not in the line of tools for crop production, cultivation and harvesting machines, that the need lies, but in the things that farmers do not now have, that are not commercially made for them that they should have. If you doubt it—look through the files of farm papers for a year or two back and see the pictures of many farmer-invented and home-made implements and conveniences with which farmers have met their problems of wartime production and labor shortage. Many of these inventions should be commercially produced. Some are, in fact, adaptations of the basic idea of items of factory equipment.

The writer of this is a farmer. I have also worked in large automotive products plants, and I have no hesitation in saying that it is impossible to be around such establishments for more than a few days without seeing scores of pieces of equipment that with but slight modification could be adapted to advantageous agricultural use. It should be understood here that where the names of particular makes of tools or of companies are mentioned it does not imply that their product is superior, or in any way better adapted to farm use than competitive products, but the names are given merely to indicate a general type of design.

The worst bottleneck in getting farm work done today is in materials handling, and here is a vast post-war market for a diverse line of equipment. Out on the farmer's fields, and around his barns, work shops, silos and granaries will be the place for mobile, off-the-road cranes, electric hoists, lift trucks and the palletized load, stackers and conveyors of diverse designs. Nearly all makers of this type of equipment have something that with but slight modification (often but the fitting of larger wheels or half-tracks) would be ready for farm service. Some of the basic ideas are embodied in farm tractor attachments. The farm equipment makers have made some small ventures in the line with manure-loaders and sweep-rake stackers. Dairy barn manure, litter and feed-carriers are basically the same as overhead monorail conveyors, and at least one concern is active in both agricultural and industrial fields.

There are many new ideas, the main application of which might well be agricultural. There is the specialized dump truck with the driver's cab and controls placed on one side, amidships, that runs backward and forward shuttlewise—obviously a great convenience for use to accompany a cornpicker, field forage crop or silage harvester, corn-binder, or combine. A lift platform would certainly be a convenient attachment to a farm truck. Further, some day someone is going to have sense enough to provide silos with elevators — for, believe me, it's a time-killing disagreeable job climbing silo ladders twice a day to get feed for the cows. It is entirely probable, too, that before many years we will have mechanical self-feeding mangers, which will be but modifications of belt-conveyor systems familiar in factories and warehouses.

The architecture and operative setup of a modern dairy barn, and to a lesser extent, all barns and farm buildings, is in all fact and appearance a factory. The materials are the same, for the big inflammable haymow wooden barns which now dot the country and which short-sighted farmers continue to build, are really obsolescent, and are as certain to disappear as did the Indian's wigwam and the pioneer's log cabin. The coming farm building will be a concrete, steel, glass, tile and asbestos building, fireproof, or at least, highly fire-resistant. Such buildings will have all the structural material and fixtures common to industrial buildings. Here is just one example—it has always seemed inexplicable to me, that so little effort has been made to adapt and intro-

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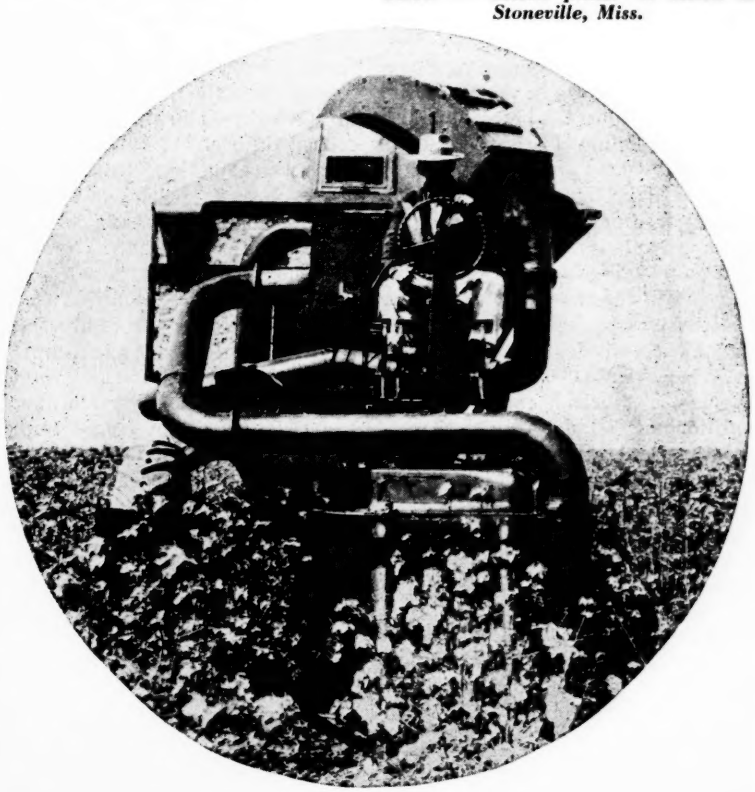
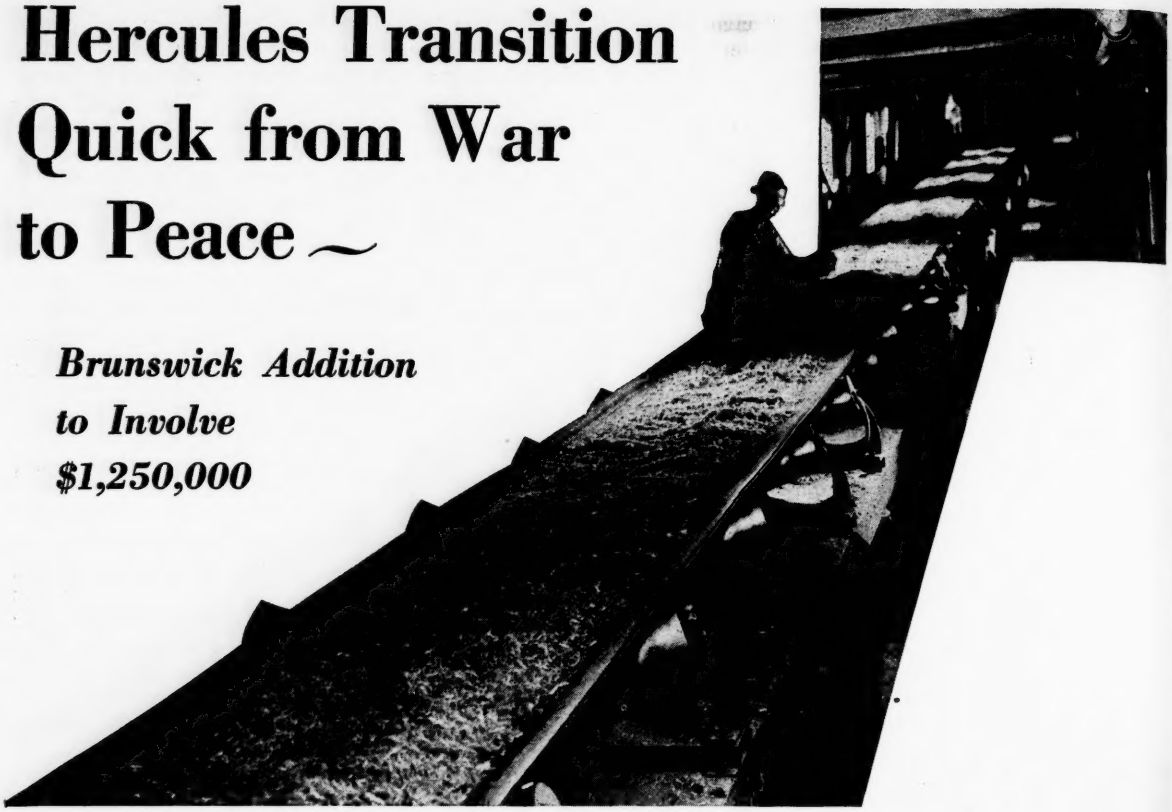
Below — Cotton picker in action at Stoneville, Miss.



Hercules Transition Quick from War to Peace ~

Brunswick Addition to Involve $1,250,000



Above—Belt conveyors carry wood from storage bins to extractors.

THE transition from war to peace has been made quickly by Hercules Powder Company, whose naval stores plants in the South are understood to be the largest producers of wood naval stores products in the world.

Each day, hundreds of tons of southern pinewood rolls into the company plants to be milled and put through specially-developed Hercules processes to extract chemical materials for use in many of the nation's industries.

A new $1,250,000 addition at the Brunswick works is expected to add millions of pounds of finished wood naval stores monthly to the company's present output of 300,000,000 pounds annually.

Hercules has pioneered in the research and development of many of the products which will be important in the reconversion of the nation's industry to peacetime production. One such material is rosin, the growth of which as a chemical material with myriad uses has been truly phenomenal.

Naval stores is one of the oldest industries in America. Old records show that the first shipment of "hard pitche, tare, turpentyne and rozens" was made from the South in 1608, thus marking the first recorded shipment of industrial products from America. Production of naval stores dates back to the Phoenicians who used rosin in the caulking of ships, shipholds, and for treatment of rope.

From the production of rosin as Colonial America's first industry, to its consumption today in countless chemical and industrial applications, the romance of rosin and its early history can be traced to present-day production miracles.

In the early 1900s, and before, the naval stores industry was usually referred to as the turpentine business, for outside of truly naval stores uses rosin was of little value commercially. In the years following 1910 some uses for rosin were found and the "rosin business" era came into being.

Hercules Powder Company became interested in the naval stores business in 1920 and purchased plants at Brunswick, Ga., and Gulfport, Miss., and immediately began construction of a third plant at Hattiesburg, Miss.

The basic material for Hercules' naval stores plants is the pine stumps which are found in the cut-over lands of Mississippi, Georgia and Florida. Utilization of these stumps is chemurgy in its true sense, for it utilizes a product of the land and provides a cash crop for the farmers. Clearing of the land of stumps also makes the land usable for farming or pasturing livestock.

A big impetus was given to the wood naval stores business by the development of a satisfactory "hog" for the reduction of stumpwood to properly-sized pieces for processing. After the wood has been put through the "hogger" it is carried by a mechanical belt to a shredder, which chops the wood into small pieces for the extractor.

The mill room of Hercules' Brunswick plant is a marvel in the mechanical handling of pinewood. One feature is a magnetic "eye" for the detection of pieces of scrap iron in

the wood. These "eyes" automatically reverse conveyors on which scrap is detected and discharge the piece of material onto a reject pile.

Today, methods of extracting rosin include many far-reaching improvements in both mechanical and chemical phases of the process. These improvements are the result of years of intensely concerted work by the company's research, technical service and operating staffs.

Many of these developments have been responsible for the increased markets for Hercules' products. Many were distinctly Hercules' contributions to the science of naval stores chemistry which not only extended the naval stores market but also brought added employment to the South. Research directed toward process improvement was responsible for the installation of specially-designed fractionating stills for the production of many new products from turpentine.

One of the products developed was a high-quality dipentene fraction which has been used by many industries as a special solvent and thinner in varnishes and enamel paints. It also enjoys considerable application as a raw material for synthetic resin manufacture. Other terpene hydrocarbons derived from the crude turpentine are separated and used as one of the essential raw materials for the manufacture of "Petrex," a synthetic resin base developed by Hercules' chemists. Other fractions are useful in the reclaiming of rubber, for solvents, and in disinfectants. The preparation of high-grade alpha-pinene for the manufacture of synthetic camphor has been accomplished, and sales to leading manufacturers here and abroad testify to its excellent quality for this purpose.

Pine oil similarly has been improved by means of fractionation and changes in plant-processing. Special pine oils are now available with superior color, odor, and other characteristics as required by various consuming industries. High-quality alphaterpineol is now obtained by fractionation and chemical treatment. Special pine oils, high in terpene alcohols, are used in numerous industries.

Development of a process for the manufacture of pale grades of wood rosin is one of the outstanding achievements of Hercules' chemists. By means of differential solvents, this pale rosin was produced, which was superior to the old grade of rosin once thought to be the best obtainable from wood. This process is particularly interesting because it is believed to be the first application of the principle of differential solution to the purification of low-price chemically intricate materials. This new wood rosin was not only pale in color but was devoid of many other defects which had been associated with prior wood rosin and which previously had limited the market for that product. Unlike the old wood rosins, which darkened, these pale grades actually bleach upon heating.

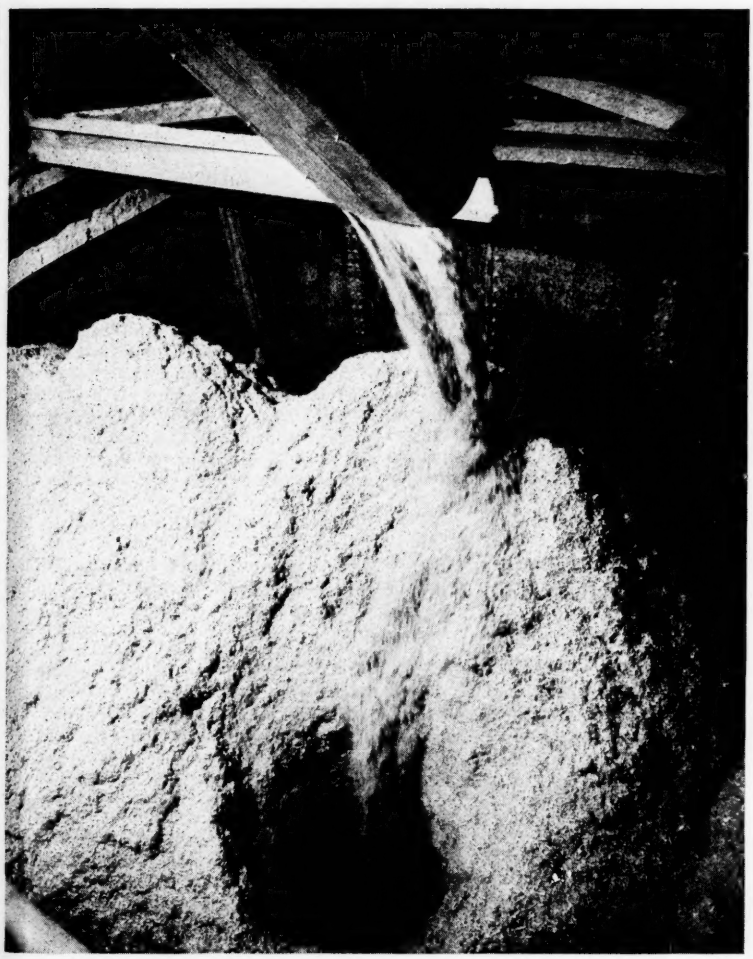
This development greatly extended the fields for wood rosin so that today the major portion of Hercules wood rosin is used where the FF wood rosin of 1920 could not possibly be employed. With development of the process of making pale wood rosin came the production of a dark resin known as "Belro." This, too, is valuable in specialized fields for which the original FF rosin would not have been suitable.

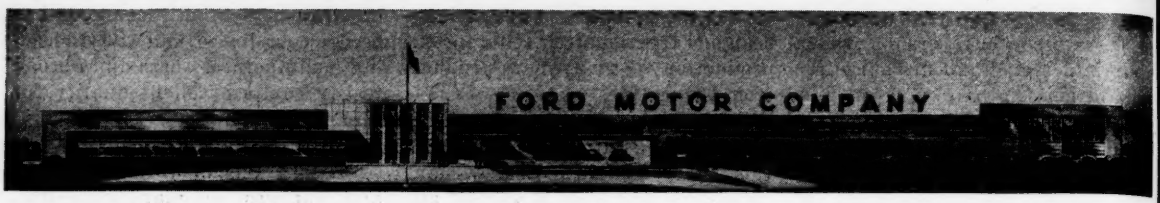
More recently the perfection of a process for manufacturing hydrogenated rosin was accomplished after years of research by Hercules' chemists and engineers. This product is far superior to rosin in resistence to oxidation, retention of color, and chemical stability. It is going into fields where rosin is not employed and is thus further extending the market for naval stores.

Vinsol resin, for landing strips

(*Continued on page* 72)

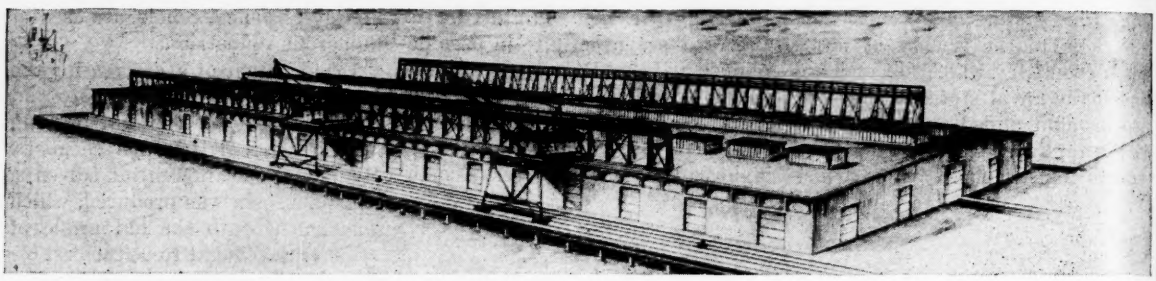
Below—After passing through the "hogger" the wood moves to the shredder where it is reduced to fine pieces and blown into the storage bins, from which it is later reclaimed for processing.





Above—Ford Motor Co. will soon start constructing a new plant on a 100-acre tract near the municipal airport at St. Louis, Mo. Designed to produce 500 automobiles daily and employ approximately 3,000 workers, the plant will be of standard brick and steel construction and 1,500 feet long, 520 feet wide. Floor space will total 700,000 square feet.

Below—Norfolk and Western Railway will spend $5,750,000 for a new pier, two warehouses and a 280-car supporting yard at Lambert Point, Norfolk, Virginia. The pier will be 1,100 feet long by 390 feet wide; the shed 1,000 feet by 320 feet; each shed 1,000 by 100 feet. Two 15-ton gantry cranes, a 5-ton cargo mast and four motor winches will be installed.



SOUTHERN CONSTRUCTION RISES 14% DURING OCTOBER TO YEAR'S HIGH

By

Samuel A. Lauver

SOUTHERN construction's upward trend continued during October with the value of contracts awarded rising almost fourteen per cent to $119,202,000, the highest point in the year so far.

The nine-month total also represented a substantial gain. Compared with the similar period of last year, the current $907,997,000 for construction contracts below the Mason and Dixon line is over twenty-two per cent ahead.

All categories of construction, except industrial, participated in the increase recorded for October. Private building more than tripled. Highway awards almost doubled. Both public building and engineering construction showed rises of slightly less than one quarter.

Industrial construction in October as in September continued to be the largest single factor in the month's total, awards being valued at $49,271,000, followed by $21,123,000 for engineering work, $20,148,000 for public building, $16,489,000 for private building and $12,171,000 for highway contracts.

The strength in private building and road construction followed closely complete relaxation of wartime controls on both types of work, which were the hardest hit by the recently revoked and much disputed construction order L-41.

While residential building soared in October as was expected with a total of $6,501,000 as compared with the preceding month's $2,158,000 for the sixteen southern states, commercial projects with an aggregate of $6,651,000 showed a larger percentage gain when contrasted with the $962,000 for such work in September.

Assembly structures, including theatres and particularly churches, were placed under contracts that amounted to $3,308,000. The figure for this type of work in September was $1,326,000. Office projects brought up the rear of the private building parade with a $425,000 figure.

Proposed construction in October was valued at $686,791,000. The Federal government has done much pump priming by furnishing money for the preparation of plans for many such projects not only in the South but throughout the land.

Public building, another field in which Federal authorities are active both in pushing local projects and planning Federal buildings, was the second largest group in the proposed column. The total for the South for October was $179,269,-

SOUTTHERN CONSTRUCTION BY STATES

	October, 1945 Contracts Awarded	October, 1945 Contracts to be Awarded	Contracts Awarded First Ten Months 1945	Contracts Awarded First Ten Months 1944
Alabama	$1,725,000	$29,587,000	$66,698,000	$31,071,000
Arkansas	1,055,000	7,378,000	9,358,000	67,244,000
Dist. of Col.	3,571,000	5,170,000	29,207,000	17,423,000
Florida	4,659,000	15,174,000	58,674,000	73,504,000
Georgia	4,014,000	71,394,000	32,665,000	40,441,000
Kentucky	2,917,000	7,580,000	16,154,000	20,176,000
Louisiana	3,586,000	37,874,000	50,129,000	52,598,000
Maryland	19,630,000	18,375,000	68,470,000	54,665,000
Mississippi	3,267,000	51,614,000	33,561,000	19,550,000
Missouri	12,787,000	38,549,000	34,179,000	43,093,000
N. Carolina	9,277,000	26,296,000	46,818,000	27,184,000
Oklahoma	3,287,000	20,703,000	28,459,000	20,223,000
S. Carolina	2,041,000	86,458,000	15,276,000	19,187,000
Tennessee	3,234,000	32,590,000	43,184,000	22,955,000
Texas	37,471,000	176,660,000	276,648,000	136,736,000
Virginia	4,201,000	51,797,000	53,204,000	77,636,000
W. Virginia	2,480,000	9,502,000	15,313,000	19,112,000
TOTAL	$119,202,000	$686,791,000	$907,997,000	$743,118,000

000. Highway construction, the third field in which Federal participation prevails, has a proposed total of $68,467,000.

Industrial construction and private building are the two categories where private capital figures largely. Despite impending labor troubles, in other sections, industrial projects, some by nationally known companies, were proposed in the South to the amount of $173,643,000 for October.

Private building proposed in October was valued at $61,169,000, or somewhat less than four times the value of contracts awarded for such work during the month. Residential building headed the list with proposals valued at $20,513,000, assembly buildings following with $15,872,000 and commercial and office projects involving $12,479 and $12,305,000 respectively.

The industrial projects, some of which have been previously reported in earlier stages, others more recently announced, included:

Corn Products Refining Co., $9,000,000 expansion, North Kansas City, Mo.

Gulf Oil Co., Port Arthur, Tex., 496 miles pipe line, $8,000,000.

Proctor & Gamble Co., $8,000,000 addition, Dallas, Tex.

Ford Motor Co., $8,000,000 manufacturing and assembling plant, St. Louis, Mo.

Tennessee Coal, Iron and Railroad Co., Birmingham, Ala., $8,000,000 expansion.

Norfolk & Western Railway Co., $5,750,000 pier warehouse and yard, Lambert Point, Norfolk, Va.

Chicago Corp., $3,000,000 high pressure gasoline plant, Carthage, Tex.

Arkansas Power and Light Co., building for $3,000,000 power plant, North Little Rock, Ark.

E. I. du Pont de Nemours & Co., $2,500,000 chemical plant, LaPorte, Tex.

Joanna Textile Mills, $1,500,000 program, Goldville, S. C.

Monsanto Chemical Co., $1,500,000 synthetic caffein plant, St. Louis, Mo.

Humble Oil and Refining Co., $1,500,000 gasoline plant, West Clear Lake, Tex.

Brunswick Pulp & Paper Co., $1,250,000 improvements, Brunswick, Ga.

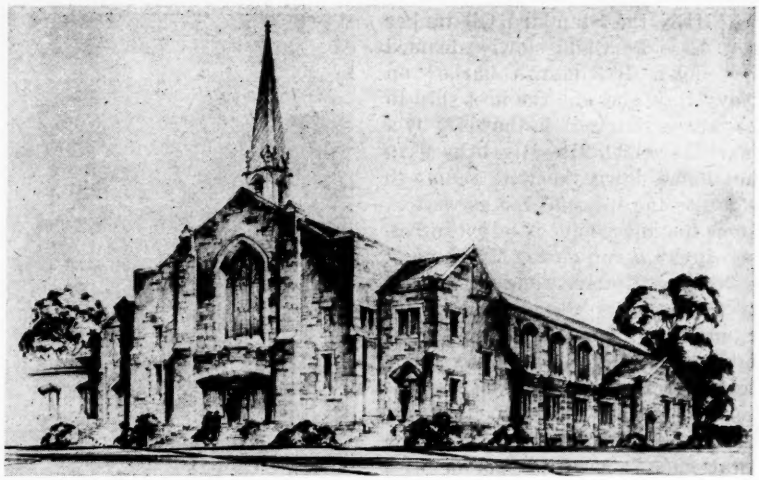
Dr. Pepper Co., $10,000,000 expansion program including $1,000,000 plant at Dallas, Tex.

Certain-teed Products Corp., $1,000,000 plant, Dallas, Tex.

Carnation Milk Co., $1,000,000 expansion, Houston, Tex.

Coca Cola Bottling Co., Houston, Tex.. $1,000,000 plant.

(*Continued on page* 62)

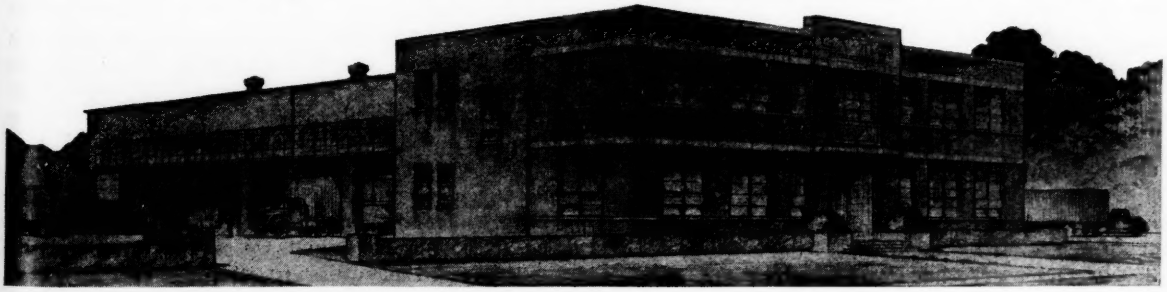


Above—Construction of the Polytechnic Baptist Church auditorium and addition is scheduled to start soon at Fort Worth, Texas. To have a seating capacity of about 1,500 people and estimated to involve expenditure of $200,000, the new building will be 95 by 138 by 55 feet. Exterior materials, according to Charles T. Freelove, chief architect of Consolidated Architects & Engineers, the designer, will be split faced and cut limestone, standing seam copper roof, steel framing.

SOUTH'S CONSTRUCTION BY TYPES

	October, 1945		Contracts Awarded First Ten Months 1945	Contracts Awarded First Ten Months 1944
	Contracts Awarded	Contracts to be Awarded		
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$3,308,000	$15,872,000	$11,629,000	$5,176,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	6,651,000	12,479,000	13,761,000	5,009,000
Residential (Apartments, Hotels, Dwellings)	6,105,000	20,513,000	32,322,000	43,953,000
Office	425,000	12,305,000	3,543,000	426,000
	$16,489,000	$61,169,000	$61,255,000	$54,564,000
INDUSTRIAL	$49,271,000	$173,643,000	$392,392,000	$165,962,000
PUBLIC BUILDING				
City, County, State, Federal, and Hospitals	$16,654,000	$113,071,000	$164,147,000	$198,405,000
Housing	735,000	30,000	18,623,000	45,183,000
Schools	2,759,000	66,168,000	24,010,000	17,463,000
	$20,148,000	$179,269,000	$206,780,000	$261,051,000
ENGINEERING				
Dams, Drainage, Earthwork, and Airports	$12,497,000	$135,064,000	$100,923,000	$154,946,000
Federal, County, Municipal Electric	5,482,000	11,587,000	19,404,000	1,025,000
Sewers and Waterworks	3,144,000	57,592,000	35,945,000	27,004,000
	$21,123,000	$204,243,000	$156,272,000	$182,975,000
ROADS, STREETS AND BRIDGES	$12,171,000	$68,467,000	$91,298,000	$78,566,000
TOTAL	$119,202,000	$686,791,000	$907,997,000	$743,118,000

Below—Service plant to be constructed by Carter Manufacturing Co., Memphis, Tenn., under an expansion program involving a new and larger general office and service plant in Memphis and Birmingham and additional service branch in Nashville. The new Memphis plant, which will contain approximately 20,000 square feet; the Birmingham and Nashville projects, 10,000 square feet each. Rust Engineering Co. are engineers and contractors for all three buildings.



Ship Stresses Relieved by Oxyacetylene Machine

WHEN the Standard Oil tanker Esso Portland slowly steamed down Baltimore's harbor on Navy Day, she was the first ship to be "stress-relieved" in that city by a machine which literally brushes a hot flame down the weld seams to equalize the internal forces that in some instances have resulted in vessels breaking up on the high seas.

No such disaster was even remotely expected for the big tanker but Standard Oil officials, long noted for operating the best in floating petroleum carriers, had ordered the vessel's seams be treated by the comparatively new procedure, as a precautionary measure, together with the previously used method in Baltimore of cutting long slits in the decks along which straps were riveted to provide a flexible seam. The Esso Springfield is the second tanker scheduled for "stress-relief," with a third yet to come to the Baltimore yard under what is to be an established Standard Oil policy.

"Stress-relief" by heat, as explained by workmen on the job, which was done in the Key Highway repair yard of Bethlehem Steel Company's shipbuilding division, means treating the two plates butting a weld seam so that the tendency to buckle is relieved by literally stretching the weld to the same length as the plates. The weld shrinks when cooled, they say, and this causes a longitudinal force similar to, but not apparent as a thread pulled in a piece of cloth.

The machine that does the remarkable job might be likened to a perambulator or vacuum cleaner, although it doesn't move as fast as either of those household appliances, and doesn't look like either. It is a series of tubes, valves, and hoses, that are installed on a carriage slowly motivated by an electric motor geared down to proceed at a speed of around 15 inches a minute.

The business end of the unit consists of two burners from which 45 tiny jets of oxy-acetylene flame slowly sweep the deck or hull plates about two inches on each side of the weld. Each of the burners is about ten inches long. The plates are cooled by two sprinkler units installed about six or eight inches behind the burners. Streams of water squirt from the pipes to lower the temperature of the metal heated to 350 degrees by the flame ahead.

Stress relieving side of Esso Portland. Note special scaffolding and track on which the machine operates.

A workman equipped with the goggles and heavy gloves of the oxy-acetylene welder operates the stress-relieving machine, ready to turn off its heating and quenching jets or to stop its motor. If the unit deviates from its course down the weld seam, the workman steers it back in what appears to be a simple operation for such a complicated and important job.

There are several variations of stress-relieving units. One is for use on the deck surfaces; a second for side work and a third for the ship's bottom, where the work must be done in the most inconvenient position. In instances where flame-sweeper machines cannot be maneuvered, the workmen use a hand unit.

The machine was developed after exhaustive study and experimentation as the result of failure of welded ships during the war, particularly the Schenectady in 1943 and the Curaco, which split in two about 25 miles outside the Ambrose Channel off New York. In the latter case, the major cause advanced for the break-up was an imperfect weld.

How a defective weld may cause a vessel to fracture can be described by ordinary comparisons. For instance, everyone who has tried to tear a piece of cellophane or scotch tape knows how difficult it is to start, but after a small rip is made the tear is easily made. Breaking a piece of glass along a line after a notch or scratch is made is another example. A defect in a weld is a notch and if located in a strength member may cause the vessel to rupture.

The new method of relieving stresses was conceived by Harry E. Kennedy of Berkeley, Calif. Subsequent investigations by Linde Air Products Co. and the Sun Shipbuild-

(*Continued on page 72*)

South Carolina Resources Extolled

SOUTH CAROLINA, long content to rest on her historic laurels, has awakened.

Perhaps it was the second World War which caused it. Or maybe the sudden realization that her sister states were getting way out front in the sound economic program to balance industry and agriculture made South Carolinians take stock and see the grand possibilities.

Whatever the cause, the people from the Low Country to the highlands of the Piedmont are joining in the campaign to tell the United States about the industrial development of abundant resources in the fast growing trade area of the southern states.

The program is hinged on the national advertising and publicity campaign which recently was announced by the State Research, Planning and Development Board, an organization created by the General Assembly during the winter of 1945 in order to coordinate the work of almost a dozen agencies.

This campaign is a tangible result of new ideas and progressive leadership which are building up within the Palmetto state. It is the dollar-and-cents aspect of a new spirit—a new determination and confidence.

This assurance, this healthy confidence in herself, is an outgrowth of a rapidly-developing consciousness of the abundant resources in men and materials which lie within her boundaries. Minerals, scarcely touched, in myriad varieties, are deposited from her mountains to the sea. Billions of board feet of fine timber, hardwoods and pine, grow rampant over a large portion of her 31,055 square miles of land, and her exceptional climate, boasting long summers and short, mild winters, presents a strong invitation to those seeking sports for the establishment of industries.

South Carolina's principal minerals are phosphate rock, marl, granite, clay products, gold, silver, manganese, iron ore, lime and monazite. It has been estimated conservatively that these resources exceed a billion dollars in value, and at present most of them lie virtually unexploited under the earth.

In Aiken County, for example,

R. M. Cooper

there are untold millions of tons of kaolins carrying 35 to 45 per cent alumina. The 4,000 to 5,000 square miles of coastal area is underlaid by limestones, much of which is special 95 per cent and higher purity material. This latter limestone is necessary to the Nephelene process for the recovery of alumina from kaolin.

Thus, South Carolina has in minerals alone the basis for a many times expanded mining industry which could develop wealth beyond the fondest dreams of her people.

To develop these resources, the state has available nearly 2,000,000,000 kilowatt-hours of electricity from her various power projects, and more will be available in supply of power at lowest prices in the near future. This ever-increasing supply of power at lowest prices truly foretells a substantial industrial future.

South Carolina's great timber reserves, contrary to popular belief, are one-third hardwoods. Located largely in the lowlands of the Coastal Plain, these hardwoods, properly utilized, could be the source of enormous income to the state. Actually, his timber provides the basis for a possible $25,000,000 to $35,000,000 furniture industry, and as plywoods and veneers these hardwoods can find an increasing usage in residential and commercial construction, boat-building, aircraft, luggage, truck bodies and many other outlets that will provide increased employment and income for the state.

The state's hardwood reserves constitute one-twentieth of the nation's total growth. Here is what South Carolina has in variety of hardwoods, including board foot volumes:

Red gum, the greatest reserve, 2,954,700,000 board feet; black gum, 1,798,300,000; tupelo gum, 699,100,000; red oak, 1,380,000,000; white oak, 857,100,000; ash, 282,500,000; yellow poplar, 448,400,000; hickory, 140,000,000; others, 1,724,200,000.

This makes a total of 10,284,400,000 board feet of hardwood reserves in the state, ready to be used in industry.

South Carolina has also an excellent labor reserve, and her population has been increasing at a more rapid rate since the last census than it did during the 1930-1940 period. In 1942 the total population was 1,955,227, as compared with 1,899,804 in 1940.

Further, according to a recent cross-section survey conducted among the state's youth in the armed forces, more than 90 per cent indicated their intention to return to South Carolina to take up business, agricultural or industrial careers. This is a clear indication of the faith the South Carolinians have in the possibilities of their own state.

In addition to the resources of her earth and her skilled labor force, the state has 6,476 miles of modern heavy-duty highways, most of them comparatively new, and 5,940 miles of improved secondary roads. These latter roads, providing "inner links" in all directions over the state, are kept in top-notch repair and are excellently marked. Altogether, these excellent highways and secondary

(*Continued on page 74*)

by
R. M. Cooper
Director
Research, Planning and Development Board
State of South Carolina

Southern Railroads Lead In Movement to Abate Smoke Nuisance

Norfolk and Western Tops List with 178 Locomotives Equipped with Steam-Air Jets,— Louisville and Nashville Ranks Second with 130 Installations

RAILROADS operating all or substantial percentages of their trackage in southern states are taking the lead toward minimizing the smoke nuisance, according to an announcement of Bituminous Coal Research, Inc., which points out that two dozen of the country's railroads including many of the major lines have installed modern steam-air jets to quicken combustion on 666 locomotives.

Locomotives operated by the southern roads and equipped with the new device, which furnishes extra air over the fire to increase burning power and thus decrease the amount of coal blown through the flues into the atmosphere, total 520 with two of the South's important companies accounting for 308 of that figure. These are the Norfolk and Western, leader for the entire country with 178 steam-air jet equipped engines and the Louisville & Nashville Railroad with 130.

A simple twist of the wrist is all it takes to reduce dense black smoke to an almost invisible haze, say officials of the bituminous coal research organization, who point out that the appliance was developed for them by Battelle Memorial Institute, of Columbus, Ohio, one of the three laboratories in which the bituminous coal industry is carrying on extensive research.

The effectiveness of the jets and similar devices were demonstrated last month at the Ohio city during the national meeting of the Smoke Prevention Association of America, with one observer declaring clouds of tarry, black smoke pouring from the stacks of five locomotives were changed to a light tan haze "with a turn of a wrist," which put the air jets in action.

Bituminous Coal Research, Inc., sponsored the demonstration. Its assistant director, E. R. Kaiser, described the jets, giving credit for their development and increased use to R. B. Engdahl, Battelle research engineer, and Eugene D. Benton, fuel engineer of the Louisville & Nashville. The railroads build and install the "smoke eaters" in their own shops from drawings and specifications issued by the coal study agency.

Effectiveness of the steam-air jet in abating smoke by its ability to mix air and combustion gases in the firebox has been known for over 100 years, states Mr. Benton, although little or no data were available from which an efficient installation could be made prior to the research prompted by the increased attention given smoke abatement during the war period.

"About two years ago," relates Mr. Benton, "both Bituminous Coal Research, Inc. and the Louisville & Nashville Railroad—one working in the laboratory and the other in the field—undertook to develop for the locomotive a practical muffler and a method of control which would be automatic and also modulate the quantities of overfire air in relationship to the amount of coal burned.

"Experience over the past two years on the Louisville & Nashville and 15 other railroads with about 400 locomotives has demonstrated that if properly designed and applied with an adequate muffler, the steam-air jet is an effective tool for engine crews in satisfactorily abating smoke." The steam-air jet is not a substitute for a good fireman, but adds to the efficiency of the job he does.

One of the obstacles to general acceptance of the steam-jet device was the excessive noise and lack of automatic controls. "The noise item alone was enough to bar their use," says Mr. Benton, "particularly on switch engines when working between strings of cars which act as a sounding board." These problems have been solved, as have others including previously uncertain design features involving steam-air entrainment ratios when steam pressure, nozzle and air tube diameters were varied, all as the result of the research program.

Installations of Locomotive Smoke-Abatement Devices

Railroad	*Number of Locomotives Equipped with Jets*
The Akron, Canton & Youngstown Railroad Co.	1
Atlantic Coast Line Railroad Co.	**6**
The Baltimore & Ohio Railroad Co.	**72**
Canadian National Railways	6
The Central Railroad Company of New Jersey	1
The Chesapeake and Ohio Railway Co.	**4**
Chicago, Milwaukee, St. Paul and Pacific Railroad	2
Cincinnati Union Terminal	1
Denver & Rio Grande Western Railroad	3
Illinois Central System	**5**
Interstate Railroad	1
Island Creek Fuel & Transportation Co.	1
Louisville & Nashville Railroad Co.	**130**
The Nashville, Chattanooga & St. Louis Railway	**29**
New York Central System	1
Norfolk and Western Railway	**178**
The Pennsylvania Railroad Co.	129
Richmond, Fredericksburg and Potomac Railroad Co.	**37**
Seaboard Air Line Railway	**4**
Southern Railway System	**25**
Tennessee Central Railway Co.	**3**
The Virginian Railway Co.	**24**
Western Maryland Railway Co.	**3**
The Wheeling and Lake Erie Railway Co.	2
TOTAL	666

Roanoke Peacetime Position Strong

Southwest Virginia City Sees No Industrial Slump

(Special Correspondence)

ROANOKE, "Magic City" of southwest Virginia, occupies a postwar position that is unique among cities of its size. There is no worry or fretting or anticipation of a slump or let-down in industrial activity. This optimistic outlook is well-founded, for Roanoke did not, during the war years, experience anything that might be remotely called a war boom, although local industries contributed greatly to the war effort. There was not a single war plant erected solely for the manufacture of munitions of war.

Conversions for specialized war production were practically zero, limited to one plant which partially converted to the manufacture of mounts for machine guns and light field artillery. The great shops of the Norfolk and Western Railroad, Virginia Bridge Company and other heavy industries produced for war without any serious dislocations of equipment on hand or the installation of new and highly specialized machinery.

These same industries' sole reconversion problems are those of procurement of raw materials and labor and filling an unprecedented backlog of orders. Virginia Bridge Company, a United States Steel Corporation subsidiary, is operating at 80 per cent of capacity, and local officials assert they will be operating at full capacity as soon as raw materials roll in. Some delay in this is anticipated because of labor disturbances in supplying areas, distant from Roanoke.

The Norfolk and Western Railroad with vast shops and locomotive building plants in Roanoke, is going ahead with a system-wide program of expansion and improvements which involves the expenditure of as yet unannounced millions of dollars. Included in the railroad's plans are at least 30 locomotives, all of which will be built in Roanoke, and will furnish employment to perhaps 3,000 skilled men continuously for over two years to come. In 1944 the N&W's payrolls in Roanoke alone totaled $20,300,000, distributed among 7,708 employees. Preliminary studies of the year 1945 indicate an increase of $2,000,000 in the payrolls and a proportionate increase in the number of employees.

American Viscose Corporation's local operation, employing 3,800 people, and the only Roanoke plant to do any conversion for war purposes, is already reconverted and in full production of rayon cord and fabric for tire manufacture. There is no plan for immediate expansion of physical facilities of the plant, but production to meet unfilled orders on hand is to be sharply upped as fast as new personnel can be added and adequately trained.

Roanoke Iron and Bridge Works and C. L. Fielder Company, both manufacturers of mine and railway equipment, are holding their labor forces at their wartime levels, and both firms have backlogs of civilian orders that keep production chiefs awake, trying to get raw materials and more labor.

The local United States Employment Service offices reported, as of October 22, 2,300 jobs available and less than 1,000 applicants. And the majority of the openings are for the better paid positions, with draftsmen and mechanical engineers and production specialists in heavy demand.

Bank resources and deposits stand at all-time highs, the former now at the $95 million level, the latter standing at $85 million, assuring ample capital to finance sound industrial activity and expansion.

An active Chamber of Commerce, employing research specialists to thoroughly study markets and trends, is working in a quiet and forceful manner to bring new industries to Roanoke and to cooperate in every way with those now in existence.

The Chamber is now studying ways to procure the government-owned bag plant at Dublin, Virginia, forty miles distant. The plan is to procure the Dublin facilities, either through lease or outright purchase, and convert the vast structure to a multiple industrial tenancy project. (MANUFACTURERS RECORD, December, 1944, and January, 1945). The capital is available locally, but disposal of surplus properties, like all Federal movements, is a slow process.

Local business leaders and industrialists are not the least bit concerned over the fact that the Dublin plant is 40 miles distant. Their belief is that new industries, well diversified, and of varying sizes, even though that far away, will redound to the betterment of Roanoke's own business, financial and industrial structure.

The labor market can be definitely called "tight." Every industry and firm in the city is ready to add to its forces. There is some uneasiness among some operators over the labor policies of the Administration, but others seem to feel the good judgment of the more than 98 per cent native-born population, which includes great numbers of home-owners, will keep down the radical labor disturbances now annoying industrial centers in other portions of the country.

"Roanoke has had no 'war boom,'" declared one outstanding leader in business and civic affairs, "and our production curve since VJ-Day has been upward. It will continue in that direction longer than you or I will live to see."

Baltimore Yard Being Dismantled

Bethlehem-Fairfield Shipyard, Inc., wartime shipbuilding operation at Baltimore, is now dismantling its ways where a total of 508 ships were constructed in less than five years. Accomplishments of the big plant included 384 liberty, 30 LST type and 94 Victory ships, or a total of 5,187,800 tons representing 10 per cent of the tonnage of the American Merchant Marine built in the emergency period. The first ship launched was the Patrick Henry; the last, the Atlantic City Victory, this being one of six ships delivered in October.

Southern Industrial Expansion

American Viscose Corporation, Meadville, Pa., plans expansion of plants at Parkersburg, W. Va., Roanoke and Front Royal, Va., and Marcus Hook, Pa.

Southern Pacific Co., placed orders for 3,500 new freight cars at cost of $13,900,000; included in the order are: 150 covered hopper cars of 70-ton capacity, 550 general service gondola cars; 200 tight bottom gondola cars and 250 open-top hopper cars of 70-ton capacity; orders include: Pressed Steel Car Co., Inc., 1,000 40-foot-6-inch box cars; Pullman-Standard Car Manufacturing Co., 600 40-foot-6-inch box cars; General American Transportation Corp., 750 50-foot-6-inch auto cars; and 150 70-ton covered hopper cars; Bethlehem Steel Co., 550 general service gondola cars; Ralston Steel Car Co., 200 tight-bottom gondola cars, and American Car and Foundry Co., 250 70-ton open-top hopper cars.

ALABAMA

BIRMINGHAM—Warehouse — Low bid at $20,600 made for construction of mill-type warehouse for Nebraska Flour Co.

BIRMINGHAM — Building — Ingalls Iron Works let contract for construction of administration building; cost $60,000.

BIRMINGHAM—Expansion — The Newera Mills, Inc., will modernize and expand plant and add machinery.

BIRMINGHAM — Expansion — Tennessee Coal, Iron and Railroad Co., U. S. Steel Subsidiary, plans major expansion program to include 120,000-ton increase in steel capacity and opening of a major new coal mine; estimated cost $8,000,000.

BIRMINGHAM—Office and Warehouse — Saunier-Wilhelm Co. has let contract for construction of office and warehouse; cost $75,490.

BIRMINGHAM—Warehouse—Barrett Division of Allied Chemical & Dye Corp. has let contract for erection of warehouse.

ENSLEY — Facilities — Seale Lumber Co. plans to revamp and enlarge entire plant and facilities.

FLORENCE—Garage — Contract at $41,485 awarded for garage for Wilcoxson Motors.

HUNTSVILLE—Bakery— Johnson and Mahoney, George M. Mahoney, interested in establishment of bakery.

MOBILE—Plant — Faulkner Concrete Pipe Co. plans erection of new plant.

MOBILE — Plant — Contract awarded for oxygen filling station and an acetylene-producing plant for Linde Air Products Co., a unit of Union Carbide and Carbon Corp., New York; plans also include space for a warehouse for "Union" Carbide.

MONROEVILLE—Mill — Vanity Air Silk Mill outlined plans for expansion of mill; expend $200,000.

OPELIKA—Factory — William Gluckin Co. erecting new garment factory to be known as the Opelika Apparel Manufacturing.

ARKANSAS

CAMDEN—Expansion — Camden Furniture Co., Matt H. Rothert, Pres., plans cross-circulation steam dry kiln, new building, etc.

HELENA—Laundry—J. D. Fisher of Memphis, and Associates, will erect $50,000 laundry later; temporary laundry will be installed now.

LITTLE ROCK—Plant—K. W. Sadler plans erection of a new fireproof cleaning plant.

LITTLE ROCK—Terminal—Kimbell Truck Lines of Cape Girardeau, Mo., will erect $45,000 truck terminal.

VAN BUREN—Plant—Van Buren Freezing Plant, Inc., plans $200,000 quick-freeze plant.

WEST MEMPHIS—Plant—Hill Packing Co. of Topeka plans $100,000 plant for manufacturing dog and cat food from horse meat.

FLORIDA

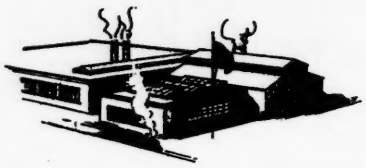
CANAL POINT—Ramie Plant—Newport Industries has let contract for construction of warehouse and building for manufacture of ramie products.

JACKSONVILLE — Plant — Southern Bell Telephone & Telegraph Co. will erect three-story building to house a dial exchange and a long-distance terminating station.

JACKSONVILLE BEACH — Laundry — Beach Laundry & Dry Cleaners, plan brick laundry building.

MIAMI—Office, Etc.—Blue Ribbon Distributors, Inc. have revised plans in progress for office and warehouse.

MIAMI—Warehouse, Etc. — Low bid made at $37,500 for warehouse, loading platform, etc., for John Morrell & Co.



MIAMI—Warehouse—Contract awarded for construction of cold storage warehouse for Merchants Produce Co.; cost $48,000.

MIAMI—Factory Building — Miami Coal & Iron Co. will erect factory building; cost $15,000

MIAMI—Packing Plant—Dads Packing Co. will erect hurricane-proof slaughter house and packing plant in Hialeah industrial section; cost $100,000.

MIAMI—Plant—Carbide and Carbon Chemical Corp., unit of Union Carbide and Carbon Corp., will erect pyrolax gas cylinder charging plant.

MIAMI—Plant— Foremost Frozen Products will erect one-story manufacturing plant.

MIAMI—Slaughter House — W. M. Baxter completing plans for slaughter house, cost $125,000, for Dade Packing Co., New York City.

ORLANDO—Building — Charles Bradshaw, Orlando, and L. B. McLeod, Orlando, interested in erection of proposed $3,000,000 Florida Livestock exposition plant on 120-acre tract; principal buildings will be an $80,000 exhibition and display hall, etc.

TAMPA—Building—M. J. Carleto of Yellow Taxi and Transfer Co. plans erecting $30,000 building.

TAMPA—Plant—ABC Steel Equipment Co. of New York will lease building to be erected by local firm for manufacture aluminum alloy window frames and casements.

TAMPA—Plant—Bernard Fels, Inc., of New York, leased building for manufacture of upholstery and furniture.

GEORGIA

Central of Georgia Railway, Savannah, Ga., plans $25,000,000 improvement program, including better passenger, freight and other service, orders for improved equipment for both freight and passenger service have been placed; new rails, bridges, safety installations, engines, both steam and Diesel; new buildings, etc.

Locker Units — Dalton Ice Co. completed plans for freezer-locker plants at Dalton, Chatsworth and Ringgold; first installation at Dalton plant will be 540 lockers with space for 1,080; receiving room, chill room, aging room, freezer facilities, curing room and adequate space and equipment for processing all types of foods for all plants; will require an investment of $100,000.

The Federal Communications Commission authorized American Telephone and Telegraph Co. and Southern Bell Telephone and Telegraph Co. to supplement open wire and cable conductors between Atlanta, Ga., and Miami, Fla., and other points; estimated cost $476,000.

AMERICUS—Building—Dairy Co-op, organized with Dr. P. F. Bahnsen and Associates, has site for pasteurizing plant.

AMERICUS—Expansion—Manhattan Shirt Co. purchased 20 acres of land for one-story brick building with 80,000 square feet of floor space.

ATLANTA—Building—Frozen Sweets, Sylacauga, Ala., has let contract for construction of 2-story building; cost $15,500.

ATLANTA — Expansion — Atlanta Woolen Mills plans two-story building which will provide 30,000 additional square feet.

ATLANTA—Factory Addition — Tucker-Carmichael Furniture Co. let contract for addition to present factory; cost $25,000.

ATLANTA—Printing Plant—Harry Barfield Co. plans new plant; architects working on plans.

ATLANTA—Warehouse and Office Building —Southern States Chemical Corp. has let contract for construction of warehouse and office building; cost $82,000.

BARNESVILLE—Expansion—William Carter Co. begun expansion and improvement in bleaching and dyeing departments.

BRUNSWICK—Plant—Tidewater Plywood Co. incorporated with John T. Houk of Dayton, Ohio, Pres.; has site, will erect plywood plant; investment of $700,000.

COLUMBUS—Textile — Muscogee Manufacturing Co. let contract for erection of buildings; cost $250,000.

COLUMBUS—Warehouse—Buck Ice & Coal Co. let contract for $51,000 ice storage warehouse.

CORNELIA—Plant—Georgia Shirt Co. will build new plant.

CRAWFORDVILLE — Building — Royal Manufacturing Co. constructing new building.

DALTON—Building — Dalton Textile Corp. begun installation of machinery in new $30,000 building.

DALTON—Plants — Contract awarded for freezer-locker plant at Ringgold, now under construction, and for plant at Dalton to start about November 1 for machinery and equipment; A. W. Dalton Ice Co.

DECATUR—Plant—DeKalb County Pantry let contract for construction of a locker plant; 1,450 lockers.

EASTMAN—Modernization — Eastman Cotton Mill plans expending $125,000 for plant modernization.

GLENVILLE—Plant—John D. Bradley, Jr., and Richard Bradley will erect $60,000 freezer-locker plant.

MACON—Building — Macon Textiles, Inc., plan three-story office building.

MACON—Building—Procter & Gamble Co., Cincinnati, Ohio, has engineering plans in progress for expansion, tripling production; expansion program is part of a general expansion at plants now being operated at Dallas, Texas; Baltimore, Md.; St. Louis and Kansas City, Mo., etc.

MACON—Expansion—The Dannenberg Co. plans expansion costing approximately $100,000.

MACON — Improvements — Armour & Co. plans expansion program involving the expenditure of approximately $100,000.

MACON — Improvements — Leaptrot Dry Cleaning Co. expending $40,000 for improvements.

MACON—Office Building—The Macon Textiles, Inc., let contract for office building.

MACON—Plant — Macon Dairy Supply Co., Sixth St., plans $10,000 post-war expansion.

MONTEZUMA—Plant—J. B. Easterlin and Associates plan freezing plant.

MUSCOGEE—Addition—The Muscogee Manufacturing Co. is expending $250,000 for addition to mill and for new equipment.

ROME — Manufacturing Plant — Advance Glove Manufacturing Co., Detroit, Mich., has let contract for construction of manufacturing plant.

SAVANNAH—Expansion — Union Bag and Paper Corp. completed arrangements for $10,000,000 term-loan for expansion of Savannah plant and other corporate purposes.

VALDOSTA—Plant — Valdosta Coca Cola Bottling Co. plans bottling plant.

WAYNESBORO—Plant—Knox Steel Co., a branch of Lombard Iron Works of Augusta, plans establishing branch plant.

KENTUCKY

LANCASTER—Cowden Manufacturing Co., St. Louis, Mo., has let contract for construction of factory.

LETCHER — Extension — Interstate Commerce Commission authorize Chesapeake and Ohio Railway to build 14-mile branch line into Letcher, Ky., and Wise county to serve coal mines of the Clinchfield Coal Corp. also granted permission to Carolina, Clinchfield and Ohio to construct 14.5-mile branch line in Dickenson county; cost of the C. & O. line will be $2,775,000, including a 3,400-foot tunnel; the C. C. & O. branch will be operated by the Atlantic Coast Line and the Louisville and Nashville Railway; line will extend northwest from Fremont to proposed coal mine near headwaters of Lick Fork Creek; will drill a 160-foot tunnel; estimated cost $1,998,663; preliminary survey and other work already done.

LEXINGTON — Expansion — The General Electric Co., Schenectady, N. Y., has option on two tracts for erection of two plants, one to manufacture lamp filaments and other completed lamps; work is part of a $225,000 expansion program for various plants.

LEXINGTON—Warehouse — P. Lorrilard Co., acquired 31 acres to erect tobacco storage warehouse.

LOUISVILLE—Furniture System — Mengel Co., Louisville, plans two-mile-long conveyorized furniture assembly and finishing system capable of carrying ten carloads of furniture at one time; cost $250,000, installed.

MURRAY—Factory—The Tappan Stove Co., Mansfield, Ohio, acquired tract for construction of new stove factory; cost $600,000.

LOUISIANA

ARABI — Plant — St. Bernard Cooperative Creamery, Inc., has let contract for construction of creamery plant building; cost $37,665.

BATON ROUGE—Plant — A. E. Lloyd and G. C. McCullough, Birmingham, Ala., acquired Louisiana Concrete Products, Inc., plant on Choctaw Road; plans immediate enlargement of plant's facilities to four times its present output.

BOGALUSA — Improvements — Bogalusa Lumber Co. will expend approximately $100,000 in renovating and improving properties of the GM&O Railroad.

CROWLEY—Plant — Rice Millers Association plans new $50,000 rice enrichment plant.

FRANKLINTON—Electric Line—Washington St. Tammany Electric Cooperative, Inc., let contract at $73,822 for 100 miles of line to serve 275 members.

MONROE—Power Plant Equipment—Westinghouse Electric Corp. has contract at $50,700 for electric system improvements at municipal power plant.

NEW ORLEANS—Building—Crescent Tractor & Implement Co. plans new building.

NEW ORLEANS—Chemical Plant—F. Uddo & Sons let contract for construction of plant; cost approximately $125,000.

NEW ORLEANS—Printing Plant — Plans being drawn for new fireproof printing shop building, for Press of H. N. Corney; cost approximately $35,000.

NEW ORLEANS—Factory—Southern Pecan Co. has let contract at $58,668 for construction of modern pecan factory building.

MARYLAND

Delaware Power & Light Co., Wilmington, Del., started work on erection of 66,000-volt transmission line to connect its Wilmington electric system with that in Kent and Sussex counties and with the systems of the Eastern Shore companies in Maryland and Virginia; including transmission line between Vienna plant and Delmar, rebuilding of transmission line between Salisbury and Berlin.

BALTIMORE — Addition — Bendix Radio Corp. has let contract for addition to its Joppa Road plant; cost $100,000.

BALTIMORE—Warehouse—Maryland Glass Corp. has let contract for construction of warehouse; cost $80,000.

PIKESVILLE—Factory — Maryland Engineering Co. broke ground for plant; will produce kitchen fixtures and nonmetal piping units.

SPARROWS POINT—Building—Bethlehem Steel Co. will rebuild department and grocery store and post office; cost $50,000.

SPARROWS POINT—Shops — Patapsco & Back Rivers Railroad Co. has let contract for construction of repair shops; cost $40,000.

SPARROWS POINT — Buildings — Bethlehem Steel Co. completed plans for annealing building, cost $380,000; cold mill and skin pass building, addition, $276,500; addition to coil storage building, $91,400; addition to pickling building, $295,800; addition to process building, $32,600, and addition to finishing building, $19,800.

MISSISSIPPI

U. S. Engineer Office, Vicksburg, Miss., approved the $42,000,000 Red River lateral canal project; canal to extend about 30 miles above the junction of the Red and the Mississippi Rivers, through Alexandria and Natchitoches sections to a point above Shreveport; 9 feet deep, 100 feet wide, to contain 9 locks.

GRENADA—Building — City has completed plans for factory building addition at Grenada Industries, costing approximately $75,000.

HATTIESBURG—Plant—Hercules Powder Co., Wilmington, Del., plans additions and improvements to naval stores plant at Hattiesburg as part of a $30,000,000 three-year construction program.

JACKSON—Plant—Jackson Wood Products Co. plans $30,000 building; manufacture poster and spool beds.

JACKSON—Plant — Preliminary plans underway for manufacturing plant, $75,000, for Tri-State Brick and Tile Co.

JACKSON—Plant—Merchants Co. of Mississippi let contract to Reed Construction Co., Jackson, for rebuilding feed mill and grain elevator; investment of $350,000.

LAUREL—Expansion — Masonite Corporation, Chicago, Ill., plans expenditure of $1,000,000 for expansion of plant at Laurel.

WATER VALLEY—Building—Swift & Co. will construct building to be used as buying station for cream, eggs.

MISSOURI

ST. LOUIS — San Francisco Railway Co. placed order with Pullman Standard Car Manufacturing Co. for 300 automobile cars at $1,639,500, to be built by company's Bessemer plant; orders for three 4,000-horsepower Diesel road engines will be placed with Electro-Motive Division of General Motors Corp.

NORTH KANSAS CITY—Building — J. E. Donaldson Manufacturing Co. erecting office and factory building; cost $60,000.

ST. LOUIS—Grain Dryer—Contract let for grain dryer for Ralston Purnia Co.; cost $30,000.

ST. LOUIS—Addition — Sunnen Products Co. has let contract for factory addition.

ST. LOUIS—Factory—Stout Sign Co. has let contract for construction of sign factory; cost $110,000.

ST. LOUIS—Equipment—The St. Louis-San Francisco Railway Co. petitioned the United States District Court for authority to spend $7,321,394 on postwar equipment.

NORTH CAROLINA

ASHEBORO—Machinery — Asheboro Farm Equipment Co. incorporated with $100,000 capital by F. E. Vestal; farm machinery.

ASHEBORO — Manufacturing Bldg. — National Chair Co. has let contract at $250,000 for construction of manufacturing building.

ASHEVILLE—Equipment — Federal Truck and Equipment Co. incorporated with $100,000 capital by Eugene Sluder.

BURLINGTON — Mills — Lasley Hosiery Mills incorporated at $200,000.

CHARLOTTE—Additions—Biltmore Dairy Farms has let contract for additions and alterations to processing plant; cost $17,500.

CHARLOTTE—Expansion—Interstate Milling Co. plans $75,000 expansion program.

CHARLOTTE—Expansion — Novelty Curtain Manufacturing Co. incorporated with capital of $50,000 by Frank D. Wright.

CHARLOTTE—Ice—Spartanburg Ice Co. of Charlotte incorporated with $100,000 capital.

DURHAM—Expansion—Durham Container Co. let contract for remodeling in connection with $85,000 expansion program at box plant.

ELKIN—Expansion—Chatham Manufacturing Co. has let contract for modernization of plant.

HICKORY—Building — Hickory Telephone Co. plans modern building to house automatic telephone exchange.

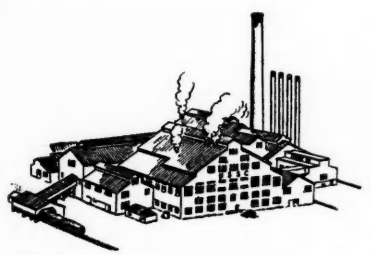
HIGH POINT—Buildings—Plymouth Hosiery Mills, Inc., has let contract for construction of three new buildings.

HIGH POINT—Factory—Jamestown Paper Box Co. started work on paper box factory to cost $250,000.

HIGH POINT—Mills—E. E. Younts has contract for two hosiery mills for Melrose Hosiery Mill and Glenn Hosiery Mill.

HOPEDALE—Plant — Copeland Fabrics, Inc., has let contract for construction of plant near Burlington.

JAMESTOWN—Plant—Highland Container Co. has let contract for construction of building; cost approximately $250,000.



LENOIR—Factory — Blowing Rock Furniture Co. let contract at $93,473 for factory, dry kiln and boiler house.

LENOIR—Furniture—Blowing Rock Chair Co. of Lenoir, incorporated with $300,000 capital.

MONROE—Plant — Borden Milk Co., New York, will erect receiving plant.

MORGANTON—Plant — Contract has been let for construction of plant to house Henredon Furniture Industries, Inc.; estimated cost $600,000.

NEWTON—Factory Expansion — Newton Glove Manufacturing Co. expend $100,000 for air-conditioning to present plant, erect addition.

RALEIGH — Warehouse — North Carolina Equipment Co. has let contract for construction of one-story warehouse.

ROCK HILL—Addition — The Rock Hill Printing and Finishing Co. plans addition to plant; cost $100,000.

ROCKY MOUNT—Enlargement — Sidney Blumenthal & Co., Inc., has let contract for addition to main weaving building.

ROWLAND—Lumber—Rowland Veneer Co. incorporated with $100,000 capital.

SHELBY—Plant—Contract let at $50,000 for four dry kilns and millwork plant for Shelby Millwork and Supply Co.

SHELBY—Textile — Hudson Hosiery Co., Charlotte, acquired 4-acre tract for erection of hosiery plant.

SPARTA—Mill—Chamber of Commerce interested in establishment of new full-fashioned hosiery mill at Sparta.

WILMINGTON—Plant—Industrial Properties, Inc., has let contract for construction of manufacturing plant to be operated by France Neckwear Co.

WINSTON-SALEM — Expansion — Hanes Dye & Finishing Co. plans expansion of 28,660 square feet to present mill building.

OKLAHOMA

ENID—Plant — Western Equipment Manufacturing Co., Chanute, Kans., establish plant in Enid.

TULSA—Building—Hercules Tool Co. plans erection of office building and warehouse; cost $25,000.

WAGONER—Plant—Green Brothers, Nashville, Tenn., plans establishment of a 1,000-acre Oklahoma hybrid seed corn growing station in Wagoner County; estimated cost $150,000.

SOUTH CAROLINA

CHARLESTON—Radio Station—Charleston Broadcasting Co. incorporated with capital of $25,000, plans erection of radio station.

CLEARWATER—Shop — Clearwater Manufacturing Co. has let contract for construction of shop; cost $48,800.

GREENVILLE—Expansion — Joanna Mills have expansion program planned which entails expenditure of $1,500,000.

INMAN—Packing House—Otto Marlow erect 2-story packing house; cost $40,000.

LA FRANCE—Building—Pendleton Manufacturing Co. plans community building; cost $75,000.

LEXINGTON—Plant — Frozen Foods, Inc., started work on freezer-locker plant.

SALUDA—Building—Saluda Factory Builders, Inc., incorporated with $50,000 capital; will erect modern building.

SPARTANBURG — Improvements — Beaumont Mills will spend $300,000 for installation of new machinery for manufacture of drills, twills and industrial yarn.

TAYLORS—Extension—Southern Bleachery & Print Works has let contract for extension of present finishing building.

TENNESSEE

CHATTANOOGA—Plant—Cummings Highway Frozen Lockers, Inc., incorporated with capital of $15,000 to erect frozen-food locker plant.

CHATTANOOGA—Plant—The Paris Coffee Co., Inc., acquired property and will establish modern plant.

COLUMBIA—Creamery—G. G. Pinkston has repurchased Jersey Pride Creamery and will erect new plant with facilities for making ice cream.

KINGSPORT—Expansion—Tennessee Eastman Corp. has under construction first new unit of projected expansion of acetate rayon production plants.

MEMPHIS—Improvements — City plans an $18,000,000 harbor expansion project including a dam at head of Tennessee chute to utilize the entire eight-mile length of the chute.

MEMPHIS—Plant—Jackson Cookie Co. purchased site for erection of baking plant.

MEMPHIS—Expansion — Ford Motor Co. has let contract for expansion of present building and construction of a parts building adjacent to present structure; cost approximately $1,000,000.

MEMPHIS—Factory—Robilio & Cuneo has let contract for construction of factory; cost $50,000.

TEXAS

BEAUMONT—Plant—Consolidated Frozen Food plans addition to lockers, increasing storage space by 400 lockers; estimated cost $30,000.

CORPUS CHRISTI — Addition — Central Power & Light Co. has let contract for construction of addition to machine shop and laboratory building.

DALLAS—Addition—C. E. Doolin has let contract for addition to present building; cost $110,000.

DALLAS — Plant — Certainteed Products Corp., Chicago, Ill., has let contract for construction of plant; cost approximately $1,000,000.

EL PASO—Addition—Mountain States Telephone & Telegraph Co. plans addition to telephone building; cost approximately $70,000.

EL PASO—Remodeling — El Paso Packing Co. has let contract for remodeling of plant; cost $21,000.

EL PASO—Building Addition—Contract for addition to present telephone building let at cost of $85,000 for Mountain States Telephone & Telegraph Co.

FLOYDADA—Grain Elevator — Floydada Producers Cooperative plans grain elevator.

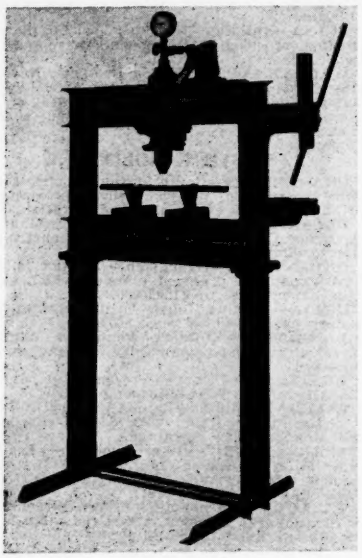
FORT WORTH—Plant — J. G. Govrel has

(*Continued on page* 64)

News from Industry

25-Ton Hydraulic Press

A self-contained 25-ton hydraulic press, manufactured by Mech-Art Products Corp., York, Pa., is represented by its makers as capable of a wide variety of pressing, straightening, bending, flattening, and assembling together with convenient movability. It is powered by hand with eight pump strokes equaling one-inch ram travel. The cylinder is steelcasting. Handle grips adjust table height. Distance between uprights is 30 inches, table travel 35 inches, ram travel 4½ inches, ram diameter 2¾ inches, height 60 inches, floor space 34 inches by 27½ inches and weight 420 pounds.



25-Ton Hydraulic Press

Two Distributors Named

The Briggs Clarifier Co., Washington, D. C., and Bethesda, Md., manufacturer of automotive, industrial and marine oil filtration equipment, has announced the appointment of two new distributors. Curtis Engine and Equipment Co., 104 Light St., Baltimore, has been given the Chesapeake Bay area which includes all Maryland counties bordering the bay, and Works Engineering Co., 4526 Olive St., St. Louis, Mo., has been assigned territory in Eastern Missouri, and parts of Southern Illinois and Indiana.

Pressure Loss Countered

Weldolets, manufactured by Bonney Forge & Tool Works, Allentown, Pa., are reported to have played an important part in solving a pressure-loss problem on the continuous gas furnaces manufactured by Selas Corp. of America. Weldolet fittings, used in place of nipples welded into the manifold, are credited with solving the problem largely because the funnel-shaped inlet of Weldolets eliminated dead spots and provided greater flow capacity.

Weldolet Fittings

Frisco Lines Plan New Streamliners

The St. Louis-San Francisco Railway Co. recently petitioned the U. S. District Court in St. Louis for authority to spend $7,321,394 on postwar equipment which will include three complete Diesel-powered streamline trains.

Trains to be replaced by the latest modern equipment are the Meteor, Frisco's mainliner connecting Tulsa and Oklahoma City with St. Louis and the Texas Special which the Frisco operates jointly with the Missouri-Kansas-Texas Lines between St. Louis and Texas. Two complete trains to cost $2,782,196 will be placed on the Meteor's run and one on the Texas Special route. Plans call for MKT to purchase an equal amount of equipment for the Texas Special.

Other expenditures contemplated by the Frisco in the petition call for purchase of 300 50-ton automobile cars for $1,639,500 and 200 70-ton hopper ballast cars at an estimated cost of $895,000. The petition also requests authority to spend $480,000 to build in the Frisco's shops at Springfield, Mo., 100 70-ton covered hopper cars and 20 standard steel underframe cabooses.

The petition said that with the approval of the court, the Frisco would place orders with Pullman Standard Car Manufacturing Co. for the streamline passenger train equipment consisting of three mail-baggage cars, 11 chair cars, one chair lounge, two dormitory chair cars, 16 sleepers, one diner, two diner-lounge-observation and one observation lounge car. Orders for three 4,000 horsepower Diesel road engines will be placed with the Electro-Motive Division of General Motors Corp. The American Car & Foundry Co. will receive orders for 70-ton hopper ballast cars and 50-ton automobile cars will be purchased from Pullman Standard.

Death Takes A. M. Lockett

With the death on October 11 of Andrew M. Lockett, 80, A. M. Lockett & Co., Ltd, New Orleans, lost its founder and an able executive since 1899. At the time of his death, Mr. Lockett was chairman of the board of directors. A grandson of Andrew Moore, Alabama's Civil War governor, his life was an active one. He was president of the New Orleans Association of Commerce in 1930 and 1931 and a member of its board of directors for thirteen years; a former member of the Board of Port Commissioners of New Orleans; one of the original members of the Intracoastal Canal Association; member of the Advisory Committee for the Sixth District Federal Reserve Bank; a former member of the board of directors of Whitney National Bank and of the New Orleans Public Service, Inc. He held an honorary degree in mechanical engineering from Stevens Institute of Technology and had been active in his profession since 1887 when he became affiliated with Worthington Pump & Machinery Corp.

Trade School Opens

Hobart Trade School, Inc., Troy, Ohio, announces that it is now enrolling veterans of World War II in a specialized welding and metal working course which has been approved by the Veterans Administration under the G. I. Bill of Rights. The course covers 640 hours' instruction in arc and acetylene welding, alloy metal welding, carbon arc welding, hardfacing and tool welding, metallizing with metal spray gun, resistance welding, submerged melt process of welding with automatic head, stud-gun welding and the heliarc method of welding magnesium and other light metals. Applications under G. I. Bill of Rights may be secured through any Veterans Administration field office or from the school and students may enroll for the entire course of 16 weeks or select shorter training.

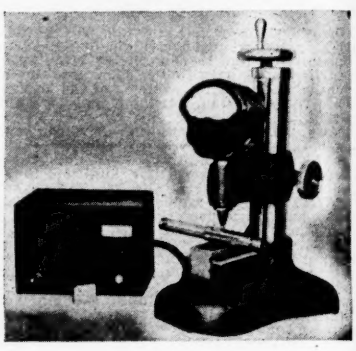
Service Leveler Explained

The Service Leveler is recommended by its manufacturer, Service Caster & Truck Division of Domestic Industries, Inc., Albion, Mich., for raising finished goods from floor level to loading platform, from shipping floor to motor truck and for lowering raw materials from car to floor. Hoisting and control mechanism is provided and the power unit and motor are enclosed. A free-wheel brake controls the lowering of the platform and a centrifugal governor is provided as a safety measure.

Precise Measurement Aided By Electronic Gages

Described as "miracles of measurement," electronic gages manufactured by Jack & Heinz, Cleveland, Ohio, have been designed to transfer precision measurements from laboratories to shops and to facilitate mass production of extremely precise equipment. Emphasizing the unfailing accuracy of electronic measuring procedure, the devices are represented as offering, for peacetime use, principles developed for vital wartime production. Based upon the principle that successful precision measuring depends upon adequate amplification, the gages are suggested for measurements which must be made to infinitesimal tolerances unobtainable with ordinary mechanical measuring systems. The gages make use of high frequency alternating current which permits lightweight electromagnetic coils in the gage head. Electronic tubes provide means of generating and amplifying small amounts of current. A new catalog put out by the company describes the instruments in detail and shows range and scale of calibration.

Model AC Electronic Comparator



Promotions Announced

W. C. Johnson, vice president of Allis-Chalmers Manufacturing Co., has announced the appointment of R. N. Landreth to the post of assistant to the vice president, and R. C. Allen, steam department manager, has announced the appointment of W. A. Yost, Jr., as assistant manager in the steam turbine department. Mr. Landreth, who has been special represenative in Washington, will continue his residence there and Mr. Yost, among other duties, will assume direction of sales of steam and gas turbines.

New Hewitt-Robins Office

Offering engineering service to mines and industries in the Southeastern states, a new office in Charleston, W. Va., has been announced by Thomas Robins, Jr., president of Hewitt Rubber Corp. and Robins Conveyors, Inc., makers of conveyor belts and conveyor systems. Staff at the new office consists of R. U. Jackson, Nelson J. Reinhold and H. N. Kepler. In addition to conveyors, the firms are producing units for rubber hose, materials handling machinery, cable railways, coal tipples and related equipment. Hewitt's manufacturing plant is located at Buffalo, N. Y., Robins' at Passaic, N. J.

R. U. Jackson

N. J. Reinhold

Steel Drawing Board

(Illustrated above)

A drawing board with all-steel tubular frame reinforced with angle pieces has been announced by Binkins Tool & Manufacturing Co., Detroit 9, Mich. The board is adjustable to a maximum tilt-angle of 60 degrees and up-down movement of six inches. It is of light weight and equipped with rubber feet. Additional equipment includes a reference tray-shelf and light bracket assembly for 48-inch fluorescent lamps.

Magnesium Book Ready

A 183-page bound volume entitled "Introduction to Magnesium and its Alloys," John Alico, author, priced to sell at $5, is ready for distribution by Ziff-Davis Publishing Co., 185 North Wabash Ave., Chicago 1, Ill. The book, designed to present magnesium information to metallurgical students and others interested in the practical aspects of the fabrication and use of metals, deals with the history and economical development of magnesium; occurrences of magnesium and magnesium metal; metallurgy of magnesium and its alloys; casting of magnesium alloys; forging, rolling, forming and extruding magnesium alloys; heat treatment and surface treatment; machining and joining; and magnesium's place as a postwar factor in product design.

Portable Electric Blowers

Four models of portable electric blowers with two speeds are now in production and available for prompt shipment, according to an announcement by the manufacturer, The Ace Co., 12-40 North Orange street, Ocala, Fla. Literature, available on request to the manufacturer, describes the blowers as efficient and time-saving for the cleaning of motors and many similar industrial uses. They are equipped with universal motors and can be supplied for voltages from 100 to 275 volts.

ILG Adds Two Engineers

R. E. Pauling has been named manager of the Tulsa, Okla., office of ILG Electric Ventilating Co., whose headquarters are at 2850 North Crawford Ave., Chicago 41, Ill., and Marion A. Elliotte has been appointed to the Detroit office staff, it is announced by P. D. Briggs, vice president in charge of sales. A past president of the Oklahoma Chapter of the American Society of Heating and Ventilating Engineers, Mr. Pauling has had long experience in the heating and ventilating business. Mr. Elliotte came to the firm from the Marine Products Co.

R. E. Pauling

M. A. Elliotte

Two Appointments Announced

John C. Leppart has been appointed assistant to the operating vice president of Southern Alkali Corp., Corpus Christi, Texas. Southern Alkali is owned jointly by Pittsburgh Plate Glass Co. and American Cyanamid and Chemical Corp. Recent appointment by the plate glass company was that of Harry W. Gleichert as director of sales for the Columbia Chemical division. Both appointments were announced by E. T. Asplundh, vice president in charge of Columbia Chemical division. Mr. Gleichert will be located at the executive sales office in Pittsburgh, Pa.

Chemical Exposition Planned

The 20th Century Exposition of Chemical Industries is organizing an industrial exposition to be held the week of February 25 to March 2 in Grand Central Palace, New York, according to announcement by Charles F. Roth, president of International Exposition Co. The show is planned to display raw materials, processing equipment and chemical products and hopes to serve as a reconversion accelerator, providing personal contacts and business conferences. Many new products created by war are expected to be on display.

New Hydraulic Cylinders

A new line of air and hydraulic cylinders consisting of 200-pound pressure with steel heads and caps and brass walls, and 1,500-pound pressure with solid steel heads, caps and walls, has been disclosed by Miller Motor Co., 4027-33 N. Kedzie Ave., Chicago 18, Ill. Five mounting styles are offered and mountings may be either directly to tie rods or through use of brackets. Present users include manufacturers of welders, bending machines, tire and plastic molding machines, presses, automobiles and swaging machines. Two special cylinders are also reported developed—an air-operated hydraulic booster for small units and a dual-stroke welder cylinder. Bulletins A-103 and H-104 may be obtained on request.

Metals Exposition Set

Plans are reported completed for the 27th National Metal Exposition to be held in the Cleveland public auditorium February 4-8 under the sponsorship of American Society for Metals and direction of W. H. Eiseman. It was reported by Mr. Eiseman that the show would be held in conjunction with the National Metal Congress and that the American Welding Society, the Iron and Steel and Institute of Metals divisions of the American Institute of Mining and Metallurgical Engineers and the American Industrial Radium and X-ray Society would cooperate in the event.

Gary Plant to Modernize

Plans have been announced for modernization of American Bridge Company's Gary, plant by L. A. Paddock, president of the firm, a subsidiary of U. S. Steel Corp. The present plant, adjacent to the Gary plant of Carnegie-Illinois Steel Corp., also a U. S. Steel subsidiary, was built in 1911 and in peacetime turns out structural steel products. During the war the plant built aircraft carrier assemblies, radar equipment and earth-moving equipment.

Promotional Agency Chosen By Florida

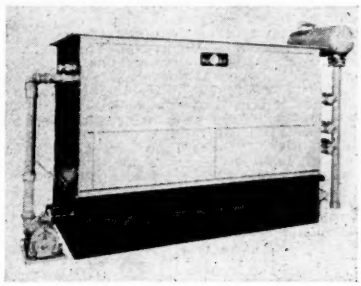
Allied Advertising Agencies of Florida has been chosen by the Florida State Advertising Commission to handle state promotional projects, according to Gov. Caldwell. The firm will establish headquarters in Jacksonville pending selection of permanent location by the Commission. Affiliated companies are Robert E. Clarke and Associates, Miami; T. M. Griffith Advertising Agency, St. Petersburg; R. E. McCarthy, Tampa, and Newman Lynde and Associates, Jacksonville.

New Manager Appointed

Announcement has been made of the appointment of John M. Martin as manager of the Pittsburgh explosives office of Hercules Powder Co. Formerly operating manager of the Hercules-operated Sunflower Ordnance Works in Kansas, Mr. Martin succeeds LeRoy Keane, who has been promoted director of sales of the Hercules explosives department in Wilmington, Del.

Niagara Liquid Cooler

An industrial liquid cooler is offered by the Niagara Blower Co., New York 17, N. Y., which is claimed to increase capacity 50 to 100 per cent over previous equipment put out by the company. The range of capacities runs from 4.7 to 137 tons refrigeration. The model rated at 137 tons is 105 inches long by 88 inches high by 60 inches wide. Water deliveries range from 11 to 220 gallons per minute. Tank is ample in size. Special provision is made for application of insulating materials.



Niagara Blower Liquid Cooler

Bowser Expands Business

Acquisition of the industrial temperature cabinet equipment business of Kold-Hold Co., Lansing, Mich., has been announced by Bowser, Inc., through the firm's president, R. Hosken Damon. The new business will be consolidated with the refrigeration division of Bowser and in the near future will be moved from present location in Long Island to a new location, according to the announcement.

Sylvania Promotes Two

Election of E. Finley Carter and H. Ward Zimmer as vice presidents of Sylvania Electric Products, Inc., has been announced by Walter E. Poor, president of the comopany. Mr. Carter, previously director of industrial relations, becomes vice president in charge of industrial relations. Mr. Zimmer, previously general manager of operation of the radio sales division, is now vice president in charge of the radio tube division.

Vice President Chosen

F. G. Gerard has been elected vice president in charge of operations of the Washington Steel Corp., Washington, Pa., it has been announced by T. S. Fitch, president. Mr. Gerard formerly was plant superintendent of the Eastern Stainless Steel Corp., Baltimore. The Washington Steel Corp. is a new company that will produce stainless steel in sheet and strip form.

F. G. Gerard

News from Industry

Development Manager Appointed

Appointment of William H. Bowman as market development manager, responsible for research and sales facilities, has been announced by P. M. Dinkins, vice president and general manager of Jefferson Chemical Co., Inc., 30 Rockefeller Plaza, New York 20, N. Y. Before accepting his present post, Mr. Bowman was manager of the technical service and market development division of Westvaco Chlorine Products Corp. He has also served as member of the chemical engineering faculties of the University of Toronto, New York University and Case School of Applied Science. Jefferson Chemical Co., jointly owned by American Cyanamid Co., and The Texas Co., is building a plant at Port Neches, Tex., for manufacture of chemical ingredients of synthetic rubber, plastics, textiles, and other petroleum derivatives.

Steel Stools in 80 Models

Steel stools in five heights and 80 models, designed for a wide variety of posture needs, are announced as available by the manufacturer, Lyon Metal Products, Inc., Clark St., Aurora, Ill. Further data will be sent on written request to the company or any of its dealers.

Institute of Textile Technology Adds Member to Staff

The Institute of Textile Technology, Charlottesville, Va., has announced the appointment of Jack D. Towery as member of the textile engineering staff. A. B. S. graduate of Texas Technological College, Mr. Towery was textile engineer in charge of spinning and weaving research at the University of Texas from 1942 until 1945. He is a registered professional engineer and member of a number of professional societies.

Masonite Promotes Westphalen

Charles H. Westphalen, pioneer staff member of Masonite Corporation, has been elected a vice president and director and made general manager of the Laurel, Miss., plant, according to announcement by the board of directors at Wausau, Wisc. Mr. Westphalen has been with the Laurel organization since its inception in 1926 and took an important part in the designing and construction of the equipment and plant in which he served initially as superintendent. In 1940 he was made manager and in June, 1945, acting general manager.

Drawing Compound Announced

A chemically inert drawing compound, "Superdraw," designed to maintain inherent strength during repeated stamping of ferrous and non-ferrous alloys, has been announced by Northwest Chemical Co., 9310 Roselawn, Detroit 4, Mich. It is made in both pigmented and non-pigmented form and is represented as being easily removed with any alkaline cleaner or other routine cleaning procedure.

U. S. Sugar Makes Report

In its fourteenth annual report, United States Sugar Corp. reports that its Clewiston, Fla., plant, during the year, ground over 700,000 pounds of cane, producing 63,473 tons of 96-degree raw sugar and 5,119,000 gallons of blackstrap. The report also announced that the company is engaged in agricultural pursuits and showed earnings of $3,385,881 since June 30, 1933.

Charlotte Branch Planned

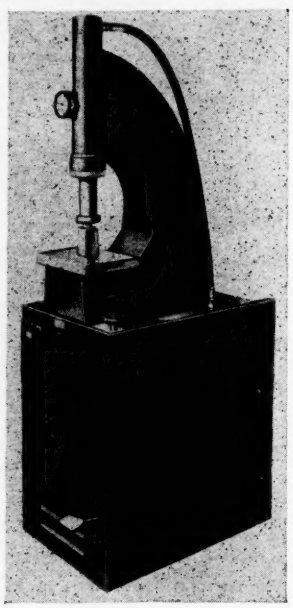
The Henry Walke Co., Norfolk 1, Va., distributors of mill supplies and machinery and contractors' supplies, has announced it will establish a branch of its business at Charlotte, N. C., January 1, 1946. The location will be at 1310 South Tryon street and will carry a stock of machine tools, small power tools, pipe, valves, fittings and mill supplies, and steel and equipment for cotton mills, industrial plants and contractors.

Dechant Reopens Office

For engineering practice including water supply and treatment, sewage disposal, hydro-electrics, and port works, Frederick H. Dechant, formerly affiliated with William H. Dechant & Sons, has reopened offices in the Fidelity-Philadelphia Trust Building, Philadelphia, Pa., in association with Frederic R. Harris, consulting engineer of 27 William street, New York 5, N. Y.

Zinc Wire Finish Announced

A successful application of zinc in a new alloy finish of wire has been announced by Johnson Steel & Wire Co., Inc., Worcester, Mass. The application, developed during the war, is claimed to give two to three times the rust-resistance of tin with a finish that acts as a lubricant. It is especially recommended by its makers where extreme acid or gas fumes are prevalent.



Hydraulic Press

Hydraulic Presses Offered

A line of positive self-contained hydraulic presses has recently been brought out by Munton Manufacturing Co., Franklin Park, Illinois. They are available in capacities of 4½, 7, 10, 15, 20 and 25 tons with means to limit pressures as low as required, with pressure gauges aiding in regulation. A holding valve is extra equipment. These presses are recommended by the maker for push-broaching, forming, blanking, drawing squeeze assembly of bushings, etc.

Frame Leaves PAW for Cities Service Company

A. P. Frame, director of the Refining Division of the Petroleum Administration for War, resigned October 10 to return to the Cities Service Co. Mr. Frame will become vice president of Petroleum Advisers, Inc., New York City, a subsidiary of the Cities Service Co., in charge of manufacturing, research and development. In that position, he will supervise the refining and development activities of all the Cities Service companies, including the chemical research and manufacture.

Procurement Problems Report

To assist the reconversion of industry to peace time production, the War Production Board has issued a pamphlet showing the approximate lead time for procurement of a selected list of components in a number of manufacturing industries.

Covering nearly 600 items, the pamphlet shows the average normal pre-war time lag between the date of receipt of an order and the date of shipment on each item, the present time lag and the estimated date when the time lag is expected to return to normal. It is explained in the introduction, however, that the time lags or lead times shown are average and that conditions in specific localities or for special quantities, or particular specifications, would obviously vary. Also, WPB officials pointed out, the present day time lag may vary from week to week, depending on stock inventories of raw materials, components, and transportation.

Among the items listed are: automotive parts, building materials, chemicals, construction machinery, consumers durable goods, copper, cork, asbestos and fibrous glass, farm machinery, general industrial equipment, lumber, paper and paperboard, plumbing and heating equipment, power equipment, printing machinery, radio, rubber goods, safety and technical equipment, steel, textiles, tools and transportation equipment.

Goodrich Man Promoted

James A. Windham is now manager of the St. Louis district of industrial products division of The B. F. Goodrich Co., it has been announced by E. F. Tomlinson, division general manager. Succeeding George Livermore, retired, Mr. Windham was moved up from the post of sales representative. He is a graduate of Penn State and has been with the firm since 1932.

Service Awards Granted

Meryl H. Geisking, sales vice president, was among those who were awarded medals and service certificates during the third quarter of 1945 by the Tennessee Coal, Iron and Railroad Co., Birmingham, Ala. Mr. Geisking's award was in reecognition of 30 years' service. In all, 141 service awards were made to the company's employees during the quarter, the highest being a gold medal symbolic of 50 years of service to Sam Lowery, top repairman in the open hearth department at Ensley Works.

Vets Rejoin Big Steel

To facilitate veteran reemployment, Carnegie-Illinois Steel Corp., largest subsidiary of United States Steel Corp., sent a job-determining questionnaire to its 44,000 employes in the armed forces. Of the replies received thus far, 88 per cent indicate desire to return to prewar jobs. The parent corporation announces that nearly 13,000 returned veterans have already been reemployed by its subsidiaries with reemployment increasing daily. More than 110,000 employees of all subsidiaries are reported to have left their jobs during the war to enter the armed forces.

Pipe Sealer Announced

Introduction of a new product known as Black Magic, a pipe-sealing compound and gasket cement, has been announced by Bowser, Inc., Fort Wayne 5, Ind. The new product, available in various size containers, is represented as being especially efficient for making leak-proof joints without becoming brittle with age and to cling to metal with glue-like tenacity. Explanatory folder with prices is available on request to the company.

Wheelbarrow Wheels Made of Light Metal

Hutton, Wheel Corp., St. Louis, Mo., has designed a light weight wheelbarrow wheel using a one piece casting of special aluminum alloy for the wheel center. This shock proof alloy wheel has mounted on it a size 4.00 x 8" 4-ply pneumatic tire with tube. Roller bearings with hardened outer sleeves are used in each of the hub, and a steel pressed in washer is used as a bearing retainer in the hub ends. Weight of the complete wheel with bearings and tire is less than 12 pounds.

-:- TRADE -:- LITERATURE

CONVEYORS ILLUSTRATED

A 16-page booklet, "Achieve Maximum Efficiency in High Speed Production with Standard Conveyors," free on request to Standard Conveyor Co., North St. Paul 9, Minn., contains interesting illustrations of standard equipment in steel mills, foundries, machine shops, airplane and electrical appliance plants.

BOOKLET ON WIRE

A new booklet, "Fine Wire of Special Materials," announced by North American Philips Co., Inc., 100 East 42nd St., New York, treats the subjects of producing good diamond dies, drawing the wire, checking diameter, elongation, tensile strength, ohmic resistance and X-ray diffraction examination of atomic structure.

PACKINGLESS PUMP DESCRIBED

Bulletin Number 51, put out by The LaBour Co., Inc., Elkhart, Ind., describes Type G pumps to be packingless, self-priming and centrifugal, designed to be a new approach to pumping problems. Copies of the bulletin will be sent on request to the company. Described are the seal, replacement of parts, drive shaft, impeller, how to disassemble and backflow retarder. Drawing of the pump is shown together with a table showing friction of water in pipes.

FRICTION SAWING BOOKLET

The machine tool division of the DoAll Co., 1301 Washington Ave., South, Minneapolis 4, Minn., manufacturers of high speed sawing machines, offer a new booklet, "Friction Sawing," which explains the new technique for cutting materials with high speed sawing machines. Photographs and charts are used to illustrate cutting rates necessary to the faster cutting and shaping of ferrous materials.

STEEL BARREL MAKING

Federal Machine and Welder Co., 212 Dana St., Warren, Ohio, have released a new booklet illustrating a complete barrel plant, designed for sustained production of 70,000 resistance welded units per month. In addition to photographs of the various machines used, the booklet carries a double-page drawing of the schematic layout of the Federal barrel plant as described and illustrated.

RADIUS DRESSER CATALOG

A six-page catalog describing three models of radius dressers has been released by U. S. Tool & Manufacturing Co., 6907 Kingsley Ave., Dearborn, Mich. One model is reported to enable an operator to dress a radius, an angle, a compound-complex angle and an angle tangent to a radius in one operation. The company asks that requests for literature state whether information is wanted regarding this equipment alone or as insert in edition #945 of 60-page catalog describing special high speed steel milling cutters.

BAKELITE REVIEW ISSUED

A new Bakelite Review has been issued containing articles on "Building Remodernization," "R.C.A. Announces New Red Seal Deluxe Records of Vinylite Resin Compound," "The Part Plastics Play in Telegram Service," "New Materials for Boat Building," "Postwar Items," "Cast Resin Plastics for the Hand Craftsman" and other interesting articles. It is published by Bakelite Corp., 300 Madison Ave., New York 17, N. Y.

LINCOLN EXPLAINS COURSES

"Building Your Career in Arc Welding" is a pamphlet issued by Lincoln Electric Co., Cleveland 1, Ohio. Together with a leaflet explaining the Lincoln courses in welding engineering, it describes the company's method of preparing men for arc welding careers. The courses are held once a month in Cleveland starting on a Monday morning and running through Friday at the Lincoln plant.

GREENVILLE INDUSTRIAL SITES

An interesting booklet with illustrations and maps has been prepared by Greenville and Northern Railway, Greenville, S. C., bringing to the attention of plant managements the advantages and opportunities for industrial locations along the railways right of way. Ample industrial power is shown to be available as well as many improved highways that traverse the area. The outline indicates that ideal sites can be found for practically any type of industry with areas ranging from five to five hundred acres obtainable.

BALL BEARING BOOK ISSUED

Heads of leading corporations, technical schools and libraries will receive the first copies of "Ball and Roller Bearing Engineering," a 270-page technical book published by SKF Industries Inc., Philadelphia. Later editions will be sold at cost to students and others interested in bearing studies. The book, a bound volume with 900 drawings and tables, was prepared by Dr. Arvid Palmgren.

Colonel Smith Returns to Braniff Airways

Robert J. Smith, formerly a vice president of Braniff Airways before leaving to accept an important military assignment in 1942, has returned to the airline as a vice president, T. E. Braniff, president, announces. Colonel Smith will be in charge of the company's expansion and route development program.

In announcing Colonel Smith's reinstatement following a board of directors' meeting, Mr. Braniff said, "We are pleased to have Colonel Smith available to undertake the responsibility of this important phase of the company's activities."

A few months after Pearl Harbor when the number of military transport planes was lowest in the war's history, Colonel Smith, then vice president of Braniff Operations, negotiated the first airline military operations contract with the army, placing at the disposal of the government Braniff planes, equipment, and maintenance service deemed necessary by the army.

After setting up the Brownsville-Canal Zone ATC operation for Braniff and believing an overall military service could be performed by the civilian airlines, he accepted a commission as lieutenant colonel in the Army in headquarters of the Army Air Forces in Washington.

Colonel Williamson Again Flies for Delta Airlines

Lt. Col. John Henry Williamson, recently discharged from the Army Air Force, has returned to Delta Airlines. Colonel Williamson, a graduate of Brooks and Kelly fields, joined the Delta Air Service in 1929. He landed the first airline passenger plane in Atlanta, an old single-engine Travelaire. In 1932 he rejoined the Army as staff sergeant. This marked the beginning of his association with Captain (later General) Claire Chennault. When Colonel Williamson returned to the Army in 1942 he was transferred to General Chennault's command where he spent two years flying supplies into China, Burma, India and the Malay States. Between deliveries he piloted General Chennault and Generalissimo and Madame Chiang Kai Shek.

Chicago, Southern Airlines Appoints Colonel Josephs

Lt. Col. N. Henry Josephs has been appointed executive assistant to the president, Carleton Putnam, of Chicago and Southern Air Lines.

H. Henry Josephs

Recently resigned as Special Consultant to the Under Secretary of War. Colonel Josephs had spent three years with the Army Air Forces.

During the early stages of the war, he was with Headquarters, Air Service Command, at Wright and Patterson fields where he was chief of the machinery and tools branch and flier's equipment branch.

Later he was made commanding officer of the 802nd Army Air Forces Specialized Depot which was charged with the responsibility of supplies for photographic and reconnaissance units in this country and overseas. In April, 1944, he was made chief of eleven Army Air Forces specialized depots located in an area stretching from Long Island, New York to Huntington, W. Va.

For one year prior to his discharge from the Army, Colonel Josephs was chief of management for the Middletown Air Technical Service Command in Middletown, Pa.

Colonel Josephs volunteered his services to the Army on December 7, 1941. At that time he was senior member of the New York law firm of Josephs, Wilson and Lincoln, and was general counsel and director of several banks and various well-known industrial and mercantile corporations.

Before forming his own law firm he was associated in the practice of law with the firm of Cravath, De Gersdorff, Swaine and Wood of New York. He also lectured on comparative corporation law from 1930 to 1939 at the New York University Graduate School of Law.

Southern Construction Rises

(*Continued from page 51*)

Masonite Corp., $1,000,000 expansion, Laurel, Miss.

Bethlehem Steel Corp., Sparrows Point, Md., $1,095,600 buildings.

Ford Motor Co., $1,000,000 expansion, Memphis, Tenn.

Mengel Co., Louisville, Ky., $700,000 program.

Tidewater Plywood Co., $700,000 plant, Brunswick, Ga.

Champion Paper & Fibre Co., Pasadena, Tex., $645,000 addition.

Tappan Stove Co., $600,000 plant, Murray, Ky.

Henredon Furniture Industries, Inc., Morganton, N. C., $600,000 plant.

Alexander Motor Co., Dallas, Tex., $500,000 sales building.

Coca Cola Bottling Co., Houston, Tex., $500,000 plant.

Montag Bros., Atlanta, Ga., $500,000 stationery plant addition.

Westvaco Chlorine Products Co., Charleston, W. Va., $400,000 expansion.

Merchants Co., Jackson, Miss., $350,000 feed mill and grain elevator.

Gravely Motor Plow and Cultivator Co., Dunbar, W. Va., $300,000 improvements.

Beaumont Mills, Spartanburg, S. C., $300,000 improvements.

Craddock-Terry Shoe Corp., $300,000 factory, Halifax, Va.

Steck Co., Austin, Tex., $282,000 remodeling program.

Kentucky-West Virginia Power Co., $250,000 power line, Kentucky.

Dominique Commission Barns, $250,000 abattoir, Opelousas, La.

Jamestown Paper Box Co., High Point, N. C., $250,000 factory.

Fidelity Storage Company, Charleston, W. Va., $250,000 warehouse.

National Chair Co., Ashboro, N. C., $250,000 building.

Pendleton Manufacturing Co., La France, S. C., $250,000 expansion.

Newport Industries, $250,000 ramie plant, Canal Point, Fla.

Lookout Oil & Refining Co., Chattanooga, Tenn., $230,000 hydrogen plant.

Carbide & Carbon Chemicals Corp., Charleston, W. Va., $220,000 improvements.

Monroe Mills, Monroeville, Ala., $200,000 addition.

Vanity Fair Silk Mills, $200,000 expansion, Monroeville, Ala.

Van Buren Freezing Plant, Inc., Van Buren, Ark., $200,000 quick freeze plant.

Mitchell Motors, Atlanta, Ga., building $172,000.

St. Louis Public Service Co., St. Louis, Mo., $165,000 bus garage addition.

Green Brothers, $150,000 plant, Wagoner, Okla.

Muscogee Manufacturing Co., $150,000 annex, Columbus, Ga.

Merrimac Manufacturing Co., Greenville, Ala., $150,000 building.

Gillespie Buick Co., Corpus Christi, Tex., $150,000 sales building.

Yarbrough Motor Co., Atlanta, Ga., $140,000 sales and service building.

Stinson & Lutz, McAllen, Tex., $130,000 packing plant.

Davis Paint Co., Kansas City, Mo., $125,000 paper warehouse.

Libbey-Owens-Ford Glass Co., Charleston, W. Va., $125,000 improvements.

F. Uddo & Sons, New Orleans, La., $125,000 building.

Eastman Cotton Mill, Eastman, Ga., $125,000 plant modernization.

Miami Motors, Miami, Fla., sales and service station, $116,500.

Stout Sign Co., St. Louis, Mo., $110,000 plant.

Southern States Chemical Corp., Atlanta, Ga., warehouse $106,000.

Rock Hill Printing and Finishing Co., Rock Hill, S. C., $100,000 addition.

Dannenberg Co., Macon, Ga., $100,000 expansion.

Dade Packing Co., Miami, Fla., $100,000 plant.

Burlington Mills, $100,000 rayon mill, Johnson City, Tenn.

Bendix Radio, Towson, Md., $100,000 addition.

Newton Glove Manufacturing Co., Newton, N. C., $100,000 improvements.

Farrar Transfer Co., Wilmington, N. C., $100,000 warehouse.

Ceco Steel Products Corp., $100,000 warehouse, Houston, Tex.

Dalton Ice Co., Dalton, Ga., freezer locker plants $100,000.

Saluda Factory Builders, Inc., Saluda, S. C., $100,000 building.

Nash Miami Motors, Miami, Fla., $100,000 service station and show room.

Reynolds Alloys Co., Listerhill, Ala., $100,000 warehouse.

Fidelity Storage Co., Charleston, W. Va., warehouse, $100,000.

Hill Packing Co., $100,000 dog and cat food plant, West Memphis, Ark.

Armour & Co., Macon, Ga., $100,000 improvements.

Chadbourn Hosiery Mill Corp., Charlotte, N. C., full fashioned nylon hosiery mill.

Union Bag & Paper Corp., Savannah, Ga., expansion program.

Southland Mills, Inc., Lufkin, Tex., addition to double newsprint capacity.

INDUSTRIAL AWARDS

(Including Private Utilities)

	October, 1945 Contracts Awarded	October, 1945 Contracts to be Awarded	Contracts Awarded First Ten Months 1945
Alabama ..	$971,000	$13,386,000	$70,104,000
Arkansas .	634,000	4,212,000	2,314,000
Dist. of Col.	.....	.....	1,924,000
Florida ...	1,592,000	5,595,000	12,741,000
Georgia ...	2,218,000	23,206,000	10,209,000
Kentucky .	1,060,000	5,523,000	4,341,000
Louisiana .	670,000	3,890,000	28,999,000
Maryland .	755,000	1,595,000	9,659,000
Mississippi.	1,184,000	2,685,000	11,953,000
Missouri ..	10,043,000	1,187,000	18,868,000
N. Carolina	3,730,000	2,485,000	15,485,000
Oklahoma .	1,209,000	957,000	4,756,000
S. Carolina	332,000	3,980,000	5,284,000
Tennessee .	1,484,000	1,577,000	21,265,000
Texas	21,488,000	59,641,000	151,671,000
Virginia ..	1,322,000	38,775,000	17,022,000
W. Virginia	579,000	4,949,000	5,797,000
TOTAL..	$49,271,000	$173,643,000	$392,392,000

PUBLIC ENGINEERING

	October, 1945 Contracts Awarded	October, 1945 Contracts to be Awarded	Contracts Awarded First Ten Months 1945
Alabama ..	$243,000	$4,017,000	$6,464,000
Arkansas .	421,000	1,971,000	2,076,000
Dist. of Col.	169,000	420,000	973,000
Florida ...	736,000	2,864,000	22,951,000
Georgia ...	35,000	22,704,000	4,973,000
Kentucky .	999,000	1,070,000	3,483,000
Louisiana .	1,351,000	9,832,000	9,282,000
Maryland .	5,157,000	4,785,000	16,647,000
Mississippi.	674,000	45,003,000	7,354,000
Missouri ..	761,000	24,016,000	4,043,000
N. Carolina	632,000	17,246,000	10,192,000
Oklahoma .	1,177,000	2,971,000	8,447,000
S. Carolina	651,000	19,217,000	2,577,000
Tennessee .	18,000	18,890,000	2,010,000
Texas	6,503,000	27,347,000	43,472,000
Virginia ..	1,596,000	1,660,000	8,446,000
W. Virginia	.....	230,000	2,882,000
TOTAL..	$21,123,000	$204,243,000	$156,272,000

PUBLIC BUILDING

(City, County, Federal; Housing; Schools)

	October, 1945 Contracts Awarded	October, 1945 Contracts to be Awarded	Contracts Awarded First Ten Months 1945
Alabama ..	$250,000	$8,627,000	$12,458,000
Arkansas .	.....	180,000	3,332,000
Dist. of Col.	899,000	4,110,000	21,145,000
Florida ...	641,000	614,000	8,168,000
Georgia ...	559,000	20,388,000	9,860,000
Kentucky .	98,000	592,000	2,194,000
Louisiana .	370,000	7,089,000	5,015,000
Maryland .	10,415,000	7,140,000	32,664,000
Mississippi.	87,000	2,018,000	10,976,000
Missouri ..	514,000	10,464,000	4,845,000
N. Carolina	2,402,000	3,010,000	12,804,000
Oklahoma .	89,000	16,110,000	9,950,000
S. Carolina	147,000	19,739,000	2,308,000
Tennessee .	787,000	1,243,000	9,436,000
Texas	1,520,000	65,052,000	41,661,000
Virginia ..	720,000	10,010,000	18,781,000
W. Virginia	650,000	2,883,000	1,185,000
TOTAL..	$20,148,000	$179,269,000	$206,780,000

PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

	October, 1945 Contracts Awarded	October, 1945 Contracts to be Awarded	Contracts Awarded First Ten Months 1945
Alabama ..	$261,000	$2,075,000	$1,595,000
Arkansas ..	.....	665,000	1,282,000
Dist. of Col.	.....	575,000	.....
Florida ...	1,405,000	5,121,000	9,856,000
Georgia ...	275,000	4,327,000	2,311,000
Kentucky .	760,000	295,000	760,000
Louisiana .	847,000	12,955,000	2,790,000
Maryland .	2,640,000	270,000	4,884,000
Mississippi.	1,322,000	1,576,000	2,322,000
Missouri ..	1,447,000	2,132,000	3,576,000
N. Carolina	565,000	2,985,000	1,543,000
Oklahoma .	288,000	255,000	608,000
S. Carolina	501,000	922,000	999,000
Tennessee .	915,000	9,370,000	1,907,000
Texas	4,253,000	16,943,000	24,153,000
Virginia ...	10,000	353,000	1,657,000
W. Virginia	1,000,000	350,000	1,012,000
TOTAL..	$16,489,000	$61,169,000	$61,255,000

ROADS, STREETS, BRIDGES

	October, 1945 Contracts Awarded	October, 1945 Contracts to be Awarded	Contracts Awarded First Ten Months 1945
Alabama ..	$	$1,482,000	$6,077,000
Arkansas ..	.....	350,000	354,000
Dist. of Col.	2,503,000	65,000	5,165,000
Florida	285,000	980,000	4,960,000
Georgia ...	927,000	769,000	5,312,000
Kentucky ..	.....	100,000	5,376,000
Louisiana .	348,000	4,108,000	4,043,000
Maryland .	663,000	4,585,000	4,616,000
Mississippi.	.....	332,000	956,000
Missouri ..	22,000	750,000	2,847,000
N. Carolina	1,948,000	570,000	6,794,000
Oklahoma .	524,000	500,000	4,698,000
S. Carolina	410,000	42,600,000	4,108,000
Tennessee .	30,000	1,510,000	8,566,000
Texas	3,707,000	7,677,000	15,691,000
Virginia ..	553,000	999,000	7,298,000
W. Virginia	251,000	1,030,000	4,437,000
TOTAL..	$12,171,000	$68,467,000	$91,298,000

HOME ON THE LINE

About the first thing a returning service man wants to do is to talk to Mom or Dad—the wife or sweetheart—or the baby! Then the rush is on Long Distance — and it's an extra big rush right now.

We are putting in new circuits faster than we ever did before, but we cannot meet the peak of the returning soldiers' and sailors' calls. So please do everything you can to keep Long Distance lines clear for service men.

LISTEN TO "THE TELEPHONE HOUR" EVERY MONDAY EVENING OVER NBC

BELL TELEPHONE SYSTEM

Southern Industrial Expansion

(*Continued from page 57*)

let contract for construction of cleaning plant; cost $45,945.

HOUSTON—Building—Houston Radio Supply Co. has let contract for construction of building; cost $40,000.

HOUSTON—Plant—Coca-Cola Bottling Co. of Houston has acquired five additional acres for plant; estimated cost $500,000.

HOUSTON—Buildings—Humble Oil and Refining Co. has let contract for construction of 10-story building and two smaller additions to present office building; cost $2,200,000.

HOUSTON—Plant—Carnation Milk Co. has preliminary plans for $1,000,000 expansion program; project includes new milk plant, ice cream plant, enlarging and reconditioning of present plant.

HOUSTON—Laboratory — Microfilm Co. of Texas, Inc., plans laboratory.

HOUSTON—Warehouse — Ceco Steel Products Corp. acquired 8-acre tract for steel warehouse to cost $100,000.

HOUSTON—Warehouse—Uvalde Rock Asphalt Co. plans construction of warehouse and storage facilities.

LA PORTE—Plant—E. I. du Pont de Nemours and Co., Wilmington, Del., will start work soon on the $2,500,000 chemical manufacturing plant at La Porte; to be used to manufacture number of livestock remedies.

LUFKIN—Expansion—Southern Mills, Inc., plans doubling capacity of newsprint plant in Lufkin.

McALLEN—Packing Plant—Stinson & Lutz has let contract for construction of packing plant; cost $130,000.

PASADENA—Equipment—Champion Paper and Fibre Co., Houston Division, let contracts for equipment costing $645,000.

PHARR—Telephone Addition — Southwestern Bell Telephone Co., Dallas, has let contract for addition to present building in Pharr.

TEMPLE—Packing Plant—Roy Straburger and R. Perkins plan packing plant; cost approximately $100,000.

TYLER—Building—Bryant Heater Co. has let contract for construction of industrial building; cost $399,991.

TYLER—Stove Plant — A. F. Thomason Manufacturing Co. has let contract at $35,000 for construction of stove plant.

VICTORIA—Gas Plant—The Barnsdall Oil Co. plans constructing gas plant and gathering system in Placedo Area of Victoria County.

WACO — Broadcasting Station — Frontier Broadcasting Co., Inc., plans frequency modulation radio broadcasting station; cost approximately $40,000.

WACO—Broadcasting Station — Industries Inc., Station WOAD, plans frequency modulation radio broadcasting station; cost approximately $40,000.

WACO—Building — Jones Fine Bread Co. has purchased site and contemplates erection of bakery building.

WEST CLEAR LAKE—Gasoline Plant — Humble Oil & Refining Co., John Sue, West Clear Lake, plans gasoline plant; cost $1,500,000.

YOAKUM—Warehouse—Yoakum Tanning & Manufacturing Co. will construct warehouse.

VIRGINIA

Improvements—Directors of Chesapeake & Potomac Telephone Co. of Virginia, Roanoke, plan expending $2,250,000 for improvements.

Virginia Railway Co. purchased four large electric locomotives from General Electric Co., which will be used in railway's electrified territory between Mullens, W. Va., and Roanoke.

BEDFORD—Factory — Bedford Furniture Manufacturing Co. has site for furniture manufacturing plant.

BRIDGEWATER — Buildings — Celanese Corp. has let contract for construction of buildings, etc.

GLASGOW—Spinning Mill—Contract let for woolen spinning mill for Lees-Cochrane Co., Inc.

HOPEWELL—Plant—Hercules Powder Co., Wilmington, Del., plans additions and improvements to purified chemical cotton plant at Hopewell as part of a $30,000,000 three-year construction program.

NORFOLK—Warehouses, Etc. — Norfolk & Western Railway Co. let contract for dredging pier slips, work in connection with construction of pier and two warehouses, a 280-car capacity supporting yard, to be constructed at Lamberts Point; pier to be equipped with up-to-date facilities; cost approximately $5,750,000.

SOUTH BOSTON—Construction — Halifax Woolen Mills, branch of Pacific Woolen Mills of Boston, has work underway on plant.

SOUTH BOSTON—Rayon Mill—Carter Fabric Corp. poured foundation for new rayon mill.

WINCHESTER — Expansion — Harry F. Byrd, Jr., editor of Winchester Evening Star, has permit for $50,000 building, exclusive of machinery and equipment.

WEST VIRGINIA

BLUEFIELD—Terminal — Atlantic Greyhound Bus Co. plans erection of $125,000 bus station, South Bluefield.

CHARLESTON—Expansion — Libbey-Owens-Ford Glass Co. plans $125,000 in improvements.

CHARLESTON — Expansion — Westvaco Chlorine Products Co. expend $400,000 for additions and improvements.

CHARLESTON—Improvements — Carbide and Carbon Chemicals Corp. will expend $220,000 for installation of Cottrell precipitators to remove fly ash from stack gases.

CHARLESTON—Warehouse—West Virginia Publishing Co. has permit for $20,000 warehouse.

CHARLESTON—Warehouse—Fidelity Storage Co. has let contract for warehouse; cost $250,000.

DUNBAR—Expansion—Gravely Motor Plow and Cultivator Co. plans $300,000 improvements.

NITRO—Plant — B. F. Gravely and Sons Manufacturing Co., St. Albans, chartered with capital of $100,000, plans tractor and farm equipment plant at Nitro.

Merger Agreement Drawn

An agreement of merger, share-for-share between American Rolling Mill Co. and Rustless Iron and Steel Corp. has been jointly announced by Charles R. Hook and Calvin Verity, presidents, respectively, of Armco and Rustless. It was also stated that special stockholder meetings of both companies had been called to act on the agreement. The statement contained announcement that dividends of 20 cents per common share of Armco and 30 cents per share of Rustless have been declared payable December 15 and December 14, respectively. The payments will bring total Armco dividends for the year to 80 cents and Rustless dividends to 75 cents per common share.

LOANS
FOR MANUFACTURERS

Short term loans for financing new machinery or modernizing plant facilities.

Long term loans for working capital purposes.

First and Merchants is a bank which has been closely identified with cotton manufacturing for many years and will be glad to discuss your loan requirements with you at any time.

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Rates* $3.00 *per day and up. Every room with bath or shower. Centrally located.

The Southern Hotel
BALTIMORE 2

GREENVILLE AND NORTHERN RAILWAY COMPANY

•

Plans for industrial plant location should include investigation of the territory served by the Greenville and Northern Railway.

The textile plants of Renfrew Bleachery (Division of Brandon Corporation) and S. Slater & Sons, Inc., are served exclusively by this railroad.

Booklet containing a survey of sites and describing the many unique advantages and opportunities available, including water supply, electricity, sewage and waste disposal, etc., will be sent upon request.

GREENVILLE AND NORTHERN RAILWAY COMPANY
P. O. Box 598, GREENVILLE, S. C.

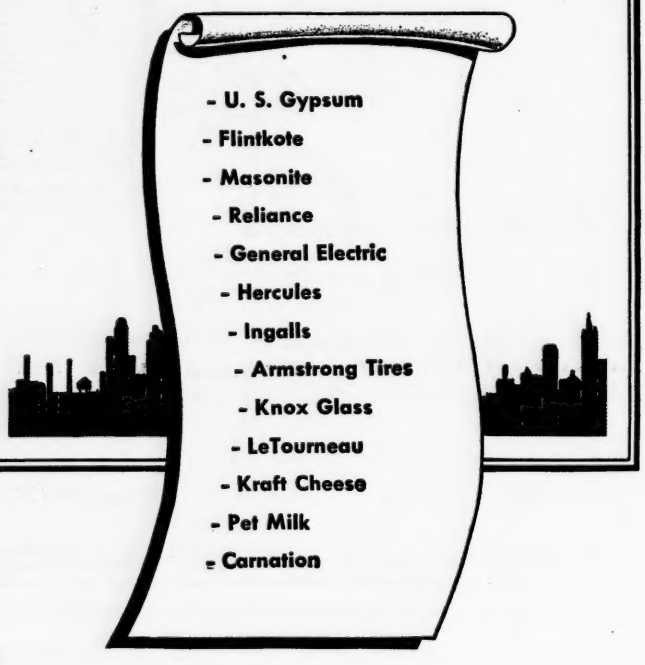
Please send descriptive survey of industrial sites and locations.

Name .....

Company .....

Address .....

MISSISSIPPI
Proves a Point



What better proof could any industry want concerning Mississippi than the fact that the above nationally known organizations are NOW successfully operating plants in MISSISSIPPI?

And this is only part of the picture, Mississippi now has over 2550 industries in operation - enjoying the advantages of America's State of Opportunity. We welcome your new plant as an addition to this list.

Your inquiry will be held in strict confidence.

AMERICA'S STATE MISSISSIPPI OF OPPORTUNITY

MISSISSIPPI

AGRICULTURAL AND INDUSTRIAL BOARD

NEW CAPITOL BUILDING • JACKSON, MISSISSIPPI

Progress of the South

(*Continued from page* 35)

has been stated on good authority that the loss in values in Georgia and Alabama through the boll weevil was almost as staggering as the losses of the war between the States, —called "Civil" War when I was a boy at school.

But what a miracle we have seen. Cotton was brought back to an average crop of about a million bales in Georgia, only about 40% of pre-weevil days in both Georgia and Alabama. It is still a great and important crop, but, diversification became a reality.

Peanuts became a great and increasing crop. Pecans became an important industry.

Live stock, particularly hogs, increased greatly, and has now become a large part of agricultural income. Tobacco is being raised in large quantities in many sections of the State, and, like peanuts, raised where cotton had been almost the sole money crop.

Melons, peaches, vegetables, poultry, dairying, have all become important sources of cash and livelihood, as our people have turned their hands and energies to whatever looked promising, failing in some, succeeding in more.

But the advance in manufacturing has been even more spectacular.

Fifty years ago there were two million spindles in the cotton mills in the cotton producing states, about 14 per cent of those in the country. In 1944, there were over seventeen and a half million spindles, or about 76% of those in the country, in these Southern States, spinning about 85% of all the cotton used in this country.

Georgia, alone, has 13% of the cotton spindles of the United States, as much as all the Southern States had 50 years ago, and manufactures over 20% of all the cotton. This industry in Georgia has been developed very largely by Georgia men, with Georgia capital, and through Georgia courage.

Cattle and hog raising developed to such a point that the big western packing houses were attracted, and an experimental plant built. As is always the case, production was greatly encouraged by having a cash market right at hand, and produc-

(*Continued on page* 68)

AT YOUR FINGER TIPS

ALL THE INFORMATION ON THIS TERRITORY

And you'll want this information, before you decide where to move or expand your business. You'll want to know all about the fastest-growing industrial section in the country—the West and Southwest.

You'll find the easiest, quickest way to get such information is to consult the Missouri Pacific Industrial Development Department. On the staff of this Department and its Research Bureau are specialists who can help you. These men can give you the *facts*—facts about raw materials, electric power, water, natural gas, labor supply, accessibility to markets . . . and all facts and figures you need regarding opportunities for the growth of your business in our territory.

Write or wire Industrial Development Department, 1706 Missouri Pacific Building, St. Louis 3, Missouri; or Industrial Development Department, Missouri Pacific Lines, Union Station, Houston, Texas. Your inquiry you may be sure, will of course be treated in the strictest confidence.

MISSOURI PACIFIC LINES

MISSOURI PACIFIC LINES — NOW MORE THAN EVER *"A SERVICE INSTITUTION"*

Summer's Just a Few Hours Away

When You Fly Delta to Florida

Florida's tropical beaches . . . the warmth of the Carolina shores . . . Sea Island and picturesque Charleston and Savannah . . . all the Southern vacation lands are but hours away by Deltaliner. For more days of vacation, for vacation fun the moment your trip begins, fly South this winter over Delta's new Chicago-Miami route.

Delta AIR LINES

General Offices: ATLANTA, Ga.

TRUNK LINE TO SUNSHINE

Progress of the South

(*Continued from page 66*)

tion increased rapidly. With increased production came other plants, and we now have, here in South Georgia, a great packing industry.

I am pointing out particularly, from among a number of others I could cite, the cotton mills and packing houses, as illustrations, because they use our own products, and in doing so, encourage production, help stabilize markets in normal times, employ labor, and greatly increase the value of our own raw products by converting and selling them.

It is in the utilization and marketing of our home products, of which we have, and can produce, so many, that our chances for industrial growth so largely lie.

Furniture manufacture shows a definite development in the South, because of our vast timber supply, having grown from around 10% in 1900 to over 25% of the output of the country. Georgia, with its great variety of soil, elevation and climate, grows a greater variety of timber and trees than any other State in the Union. It offers great opportunities for the industrial development in almost all of the things made of wood.

The new plastic industry, which has made great strides during the War, is bound to come to the timber areas in the South.

The Central of Georgia, itself, has located on its lines three of the largest glass concerns in the country, ready to build as soon as materials are available; attracted by reason of our sands and clays, and the belief that a large market will be developed in this territory for their products.

The pulp and paper industry, following a Georgian's development of a process for using pine for paper, has built great plants and invested millions in the South, and more to come. This industry is another illustration of local industries opening a wide and permanent market for our raw material, in both small and large quantities, and much of it of a species of rapidly growing pine of less value for other purposes.

It opens to the southern landowner almost another annual crop with an annual income, if intelligent and scientific forestry is practiced.

And, in that connection, it is with pride that I mention the fact that, realizing the tremendous value of

(*Continued on page 70*)

PERSONNEL PROBLEMS ?

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- An abundance of natural resources.
- Water portage to the Seven Seas!

FOR FULL PARTICULARS WRITE

The MONCKS CORNER CHAMBER of COMMERCE

MONCKS CORNER, S. C.

STENCILED SHIPMENTS INSURE FAST HANDLING

STENCIL MARK YOUR SHIPMENTS

CLEAR, EASILY READ, PERMANENT STENCILED ADDRESSED SHIPMENTS move through the Shipping Room faster and are speeded all along in transit.

THESE NEW DIAGRAPH-BRADLEY FOUNTAIN STENCIL BRUSHES ... each represent major advancements in stencil brush design and efficiency ... featuring: STURDY ALUMINUM CONSTRUCTION • LIGHT WEIGHT • LARGE FENDER GUARD to prevent ink on bristles getting on table, clothing, etc. • LARGE INK CAPACITY • ALWAYS READY FOR USE. THE PENACTION FEED* operates like a fountain pen • THE SIDE BUTTON STREAMLINER* is controlled by a diaphragm valve • CAN'T LEAK.

*Pat. App. For

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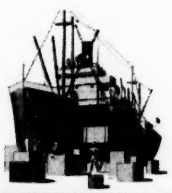

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NATURAL GAS

A fuel whose value has been proven by years of use in a most diversified line of industrial applications.

Natural gas has created the possibility of effortless comfort by the facility, and economy with which it fits into the home.

SOUTHERN NATURAL GAS COMPANY

Watts Building **Birmingham, Ala.**

Progress In The South

(*Continued from page* 68)

proper forestry to the landowners of our territory, and to the States we serve, and to the great plants dependent upon a steady and constant supply of suitable woods now operating in our territory, the Central of Georgia Railway which has long had an Agricultural Department of great value to the States within which it operates, has established a department of forestry, employing an experienced and scientifically trained forester, devoting his entire time to aid the landowners in the growth, the development, and production of what we might call "tree farms"; open to all we can serve, and without any charge. Already it looks as if we must give him help.

If space permitted, which it does not, I could go on indefinitely to show how the South, and our section, has been overcoming, and to a large extent has overcome the tremendous handicaps and losses under which we suffered due to the Civil War and the boll weevil scourge.

I have pointed out these conditions, so that you could realize how far we have traveled in the span of one lifetime, in the lifetime of many people yet living, until, while we have much yet to do to bring us up to the level of some other States, we are progressing and developing more rapidly than any other section of the United States, due to the courage, the vision, and the energy of our own people; and to remove from your minds, any doubt of our own people, if there is any doubt in the minds of any of you, that might have been placed there by the oft repeated libel that we are a backward unprogressive, stagnant people.

And also to demonstrate to you by the history of the past, how the courage and the energy that overcame so much, and which still lives in our people, will drive our section forward beyond anything we can see or visualize now.

This South of ours, is naturally agricultural. Agriculture is the foundation of a large part of our wealth, and always will be. As it improves, the State improves. The improvement has been slow, looked at without considering the fact that our section, and our South, practically started over again from scratch, financially, in 1870. Considering that fact, our people have done marvelously well.

For many years, there was but little money in the South with which things could be done. Improvements, and new but expensive methods, are limited by the money available with which to do them, and go hand in hand with increased earnings and returns.

The extent to which money is lacking among a people, measures the extent to which they are lacking in the economic values represented by money, and is reflected in the improvement and development of agriculture, and business, and industry. As money was made, improvements were made. As capital increased, methods, education, and better opportunities moved on with it.

Since 1930, the bank deposits in the South have increased 250 per cent, compared with 50 per cent for the country; and since 1900, two thousand four hundred per cent, compared with 1,000 per cent for the country.

For the first time in 75 years, the South has capital to vastly improve, and develop, and restore, its farms and soil far beyond what has been done; to improve living conditions, and add to the comfort of its people; and, to establish its own industries.

Farms are bound to be mechanized, homes and living conditions improved, for both owners and tenants. Agricultural methods, soil conservation and restoration, held back by lack of funds, will be greatly advanced, increasing the wealth of our people.

Our people have the courage and ability, and now have the means and credit to consolidate their war time economic gains, and take advantage of the economic opportunities that their unequaled supply of raw materials and resources give them.

There is not a town or village too small for operation of some processing or manufacturing plant, provided the raw materials are there and markets accessible, and there are many such. The labor is already at hand.

Every town needs, and should have, some industrial enterprise to process its available raw products. It is astonishing how much money such enterprises bring to a town, and how it helps to stabilize trade and labor conditions.

I hope to see our people concentrate upon developing small industries to process the products of their own territories, and market the manufactured articles, and, beginning with reasonable capital, add to it as needed, the more of it local capital—the better. Almost all of our big industries started that way.

Where could there be a better and more inspiring example than in Dawson, Ga. Starting in a small way, Ed Stevens began processing the raw products raised right at his door. Cotton seed, and now peanuts and its many products, until his is a many million dollar business, a national business, and he is unwilling to put a limit on the possibilities.

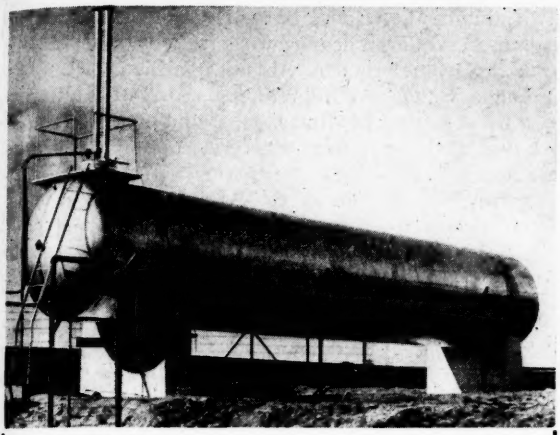
Some of you may feel that I am unduly optimistic. But, to show the faith that is in me, and in my colleagues, I will tell you, the Central of Georgia Railway, of which I have the honor to be the head, is spending $25,000,000 in new rail, new bridges, new safety installments, new engines, new cars, new trains, improved track, to be able to take care of the business we feel confident our territory will develop, and to give our people the service we think they will need.

Factory Fund Raised

Members of the Clarksdale Business Men's Association have invested $12,200 in the future of Clarksdale by raising this amount to purchase sites for the location of industries in this city. The Sack property, for which the city has had an option for some time, will be purchased at an approximate cost of $31,000 and the sum raised will be applied on the purchase.

Arkansas Utility Makes Survey

A five year study expected to result in an expenditure of millions of dollars in Arkansas is now being carried out by Arkansas Power & Light Co., according to the Company's president, C. Hamilton Moses, who revealed the survey with announcement that the huge construction program is being carried out in Helena and $75,000 is being spent on new transmission lines into Wynne.



15,000 *Gal. Propane Capacity Tank* 8′ 0-1/16″ *I.D. x* 50′ 5-¼″ *Long*

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Consult Lancaster's experienced engineers for your fabricated steel plate needs. Complete designs and estimates will be furnished promptly. Write, phone or wire today.

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Another COLE Product

Processing kettles of all kinds, built for particular requirements. *(For example:* a battery of 15 nickel-clad starch kettles was recently made by us for Lanett Mills, of West Point, Ga.) If it's kettles, kiers, vats, or pressure vessels of any kind you need, our Engineering Department will submit designs. Products made from steel, nickel-clad, stainless and alloy steels, aluminum, Monel metal, etc.

Tank Builders for Over 80 *Years!*

Other Cole products are: Tanks, Towers, Storage Bins, Standpipes, Smokestacks, Flumes, Castings, Nickel-Clad, Stainless Steel and other Alloy Vessels, Air Receivers, Digestors, Boilers, Jig Boxes, Fabricated Steel Work, etc. *Write for "Tank Talk" No. 27-D.*

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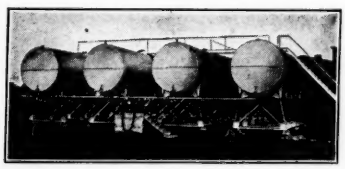
This applies to field as well as shop built equipment.

Write us for information and quotations.



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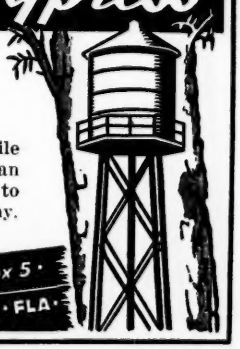

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Get a Davis tank first, and while you will remember it, you can always forget it. It seems to take care of itself. Find out why.

G·M·DAVIS & SON · P·O·Box 5 · PALATKA · FLA·

Stress Relief by Heat

(*Continued from page* 52)

ing and Drydock Co. proved its effectiveness. It is founded on the fact that metal expands when heated. Temperatures not exceeding 350 to 400 degrees will not produce physical or metallurgical changes, according to authorities.

The weld, it is pointed out, is in tension, while the stresses on each side of the seam are in compression. It is these forces that the new method is designed to relieve. Only a comparatively small change in the length or dimension of the weld is necessary. The figure is placed at around 15 ten-thousandths per inch in the length of the weld.

National Gypsum Program

(*Continued from page* 44)

Ohio, that supply building lime. In Bellefonte, Pa., the manufacture of lime for industrial and agricultural purposes is carried on. Three plants, in Dover, N. J., Alexandria, Ind., and Mansfield, Mass., produce rock wool insulation. Casein paint is made in the Bronx, N. Y., plant.

There are gypsum plants and deposits at Akron, N. Y., National City, Mich., Medicine Lodge, Kans., and Saltville, Va. Quarries at Dingwall and Walton, Nova Scotia, Can., supply raw gypsum rock to the Portsmouth, N. H., operation as well as to the Bronx, Savannah and eventually Baltimore.

Cast Iron Pipe

(*Continued from page* 39)

ago it could not have been considered. There are two reasons for this change: First, the improvement in the physical qualities of the pipe itself due to completely new and radical changes in the method of manufacture; and second, the development and perfection of a gland-packed joint which is leakproof even at high pressure.

"It Couldn't Be Done"

(*Continued from page* 43)

new, heavy-duty Auto-Nailer which has promise of filling a long-felt need among furniture manufacturers. It will not replace the present model, but will supplement it, doing a heavier work for which the smaller machine is not qualified.

Bill Wilkerson himself is a native of Rome, Ga., and a graduate of Emory University. For a while he taught at Baylor Military Academy and in the Atlanta public schools. Subsequently, he did a variety of j o b s, including directing radio broadcasting and selling advertising. Then he became interested in developing the machine that makes its own headless nails, cuts them and drives them. And nothing could stop him until he perfected it.

Hercules Transition Quick

(*Continued from page* 49)

and military roads; pine oil for the flotation of ore; resin emulsifier for synthetic rubber; Hercolyn for anti-fouling paints; rosin size for the production of paper packages, and Pentalyn resins for flameproofing duck for tents are but a few of the uses of naval stores products which will play an important part in the reconversion of industry in the South to peacetime production.

• Fireproof, weatherproof, water-resistant, strong, needs no painting, rustproof... all in one product? Yes, there's one building board that gives you all these features, that's equally suited for indoor or outdoor construction.

This non-critical, available-now material comes in big, 4'x8' sheets that are readily sawed or scored, drilled and nailed. Ideal for use in exterior construction as siding or sheathing. Perfect for interior use as walls, partitions, ceilings, barriers, floors, and for ducts, hoods, humidifiers where heat and moisture are hazards.

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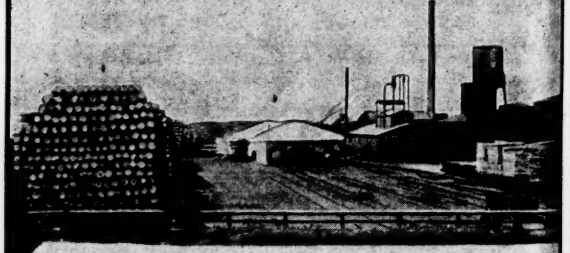

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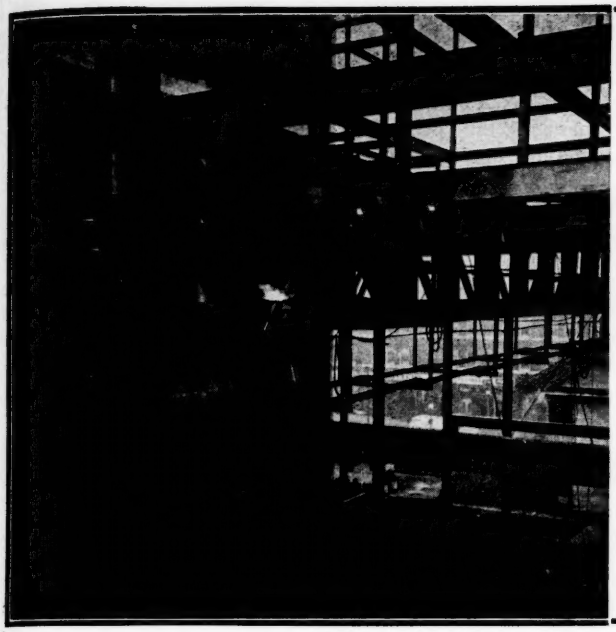

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Railroads Prepare for Future

(*Continued from page 40*)

complete reconversion to the ways of peace. Railroads are vitally concerned both with the total traffic to be transported and with the conditions under which they will compete for their share, for successful railroading depends upon volume traffic.

This is true of railroads even more than of most other forms of business, because so large a part of railroad investment, approximately three-fourths of the whole, is in fixed roadways. Relatively large investment in fixed ways, in fact, is characteristic of all forms of advanced transport. The primitive pack-mule needed no prepared roadway, but trucks and trains do. The primitive canoe could thread streams in a state of nature, but the modern towboat and barge require costly improved channels. The barnstorming plane could use a cow pasture for an airport, but the modern airliner calls for airports and airways. All these improvements call for heavy investment by someone. In the case of the railroads, they themselves provide their roadways out of their own resources, maintain these ways themselves, and pay taxes on them which are not spent for the special benefit of railroads but for the support of the general work and services of government.

This difference in situation as to investment and taxation is the more important because of its effect upon the distribution and division of traffic as between railroads and other forms of transport. Most commercial traffic is exceedingly sensitive to price considerations. The transportation agency which must meet all its own costs and pay real taxes besides, and must cover those costs in its rates, is at a distinct competitive disadvantage with one which can shift very real portions of its costs, wholly or in part, from those who use the service to those who pay general taxes.

The railroads are self-supporting, tax-paying business enterprises. To put all commercial transportation upon this same footing would require no more than the payment of reasonable user charges by those who use the roadways, waterways and airways, created and maintained largely by public funds, for the purpose of carrying on the business of transportation.

Under such a policy of equal treatment, traffic would normally and naturally flow to the means of transport which could offer the most satisfactory service at the lowest cost. Under such conditions, the country could be assured of the continuance of the investment of private capital necessary to supply the sort of efficient rail transportation which, as the war has so strikingly demonstrated, is a national necessity now and in the future.

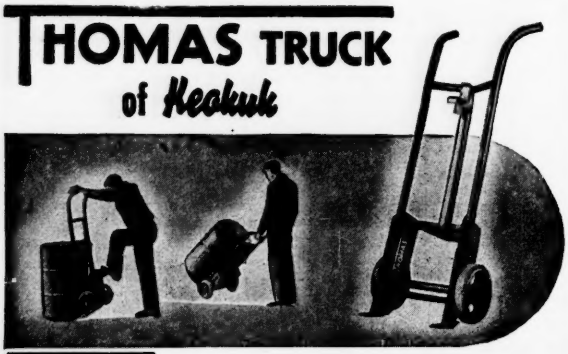
South Carolina Resources

(*Continued from page 53*)

roads will link industrial plants with raw materials and markets anywhere. South Carolina is the center of one of the nation's best markets. A circle drawn around the state, with a 700-mile radius, includes many of the major cities.

(*Continued on page 76*)

THOMAS TRUCK of Keokuk



THOMAS MAKES

4 WHEEL TRUCKS

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Safety One Man

BARREL TRUCK

NO. 90

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- Safe—no backstrain
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A Cinch for One Man

Safer, faster, easier way for one man to handle barrels, drums, kegs up to 1000 lbs. Chime hook engages rim and cast steel prongs slide under drum instant trucker pulls truck back. That's all there is to it! Rubber tired wheels.

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and now the FLEX V TRADE-MARK

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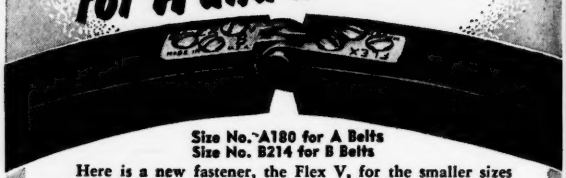

Size No. A180 for A Belts
Size No. B214 for B Belts

Here is a new fastener, the Flex V, for the smaller sizes of V-belts that is going to establish the same outstanding performance record as the Alligator V-belt fastener has already established for the larger sizes of V-belts.

This new Flex V fastener is made in two sizes for A and B section V-belts. It is simple in design, easy to apply and the separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. No metal touches the pulley so Flex V fastened belts can be run on a V-flat drive.

Folder No. V-12 gives complete details on this new Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

Order from your supply house

FLEXIBLE STEEL LACING CO.

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Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts, Alligator V-belt Fasteners for V-belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

The cylinders on all V-type Wisconsin Air-Cooled Engines are cast in pairs, separate from the crankcase, for quick, economical servicing when required. In case a cylinder is accidentally scored beyond the possibility of reboring, it is only necessary to replace a relatively inexpensive pair of cylinders instead of an entire engine block. The picture shows the Model VE-4 Wisconsin Engine, with protective shrouding removed, illustrating method of attaching cylinders.

Most H.P. per pound

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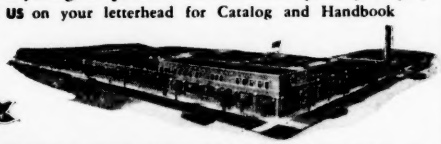

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South Carolina Resources

(*Continued from page 74*)

Besides her great highways, the state has three fine ports. The largest is at Charleston, but excellent harbors and port facilities also are provided at Beaufort and Georgetown. These provide an outlet for foreign trade as well as for coastwise shipping along the inland waterway. The state has a number of well-equipped airports, and others are being developed.

In her long-summer, mild-winter climate, South Carolina offers weather that approaches a year-around ideal. Since artificial heating begins around the last of October and ends the first of April, the costs of fuel and heating facilities are relatively low. The annual mean temperature is 63 degrees.

In view of this—a fact important to industrialists — mill or factory buildings need have no allowances for snow loads, and depth of foundations to get below the frost line must be only from six to twelve inches. This means lower cost of construction as well as lower cost in maintenance.

Another important fact is that under these conditions employes can work in open factories under natural ventilation longer than in most sections of the nation, and absences caused by physical ailments are, of course, considerably reduced.

Of the present 1,169 industries in South Carolina, only 69 are out-of-state corporations. Textiles, the largest single industry, makes up 35 per cent of the total. Others, in the order of their importance, are:

Forest products, 26 per cent; stone, clay, glass, 13 per cent; food products, 8 per cent; chemicals, 8 per cent; paper and pulp, 4 per cent, and miscellaneous, 6 per cent.

Obviously, in view of the state's undeveloped resources, the number of possibilities for increases in each of the fields of industry listed are virtually unlimited.

Any new manufacturer who seeks to take advantage of the opportunities available will find plenty of help from South Carolina's Research, Planning and Development Board. If a manufacturer asks the board for specific information about locating in the state, the proper authorities in every place that might be considered will be notified, and the board will cooperate closely with chambers of commerce, local planning boards, city and county officials, etc.

The major policies of the board are (1) to cooperate with present industries in the state, (2) to stimulate incentive and enthusiasm from within the state, and (3) to invite outside businesses to South Carolina.

South Carolina's motto is *Dum Spiro, Spero* (While I Breathe I Hope); also, *Animus Opibusque Parati* (Prepared in Spirit and Wealth, or Ready with Minds and Resources), and at no time in her history have these phrases been more fitting than they are now—where resources and markets meet.

Elwell-Parker Unit Handles Acids

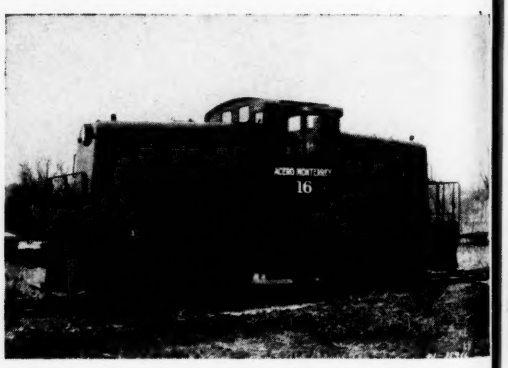
Handling large carboys of acids and cylindrical packages of chemicals in lump or powder form under war-time conditions has challenged the ingenuity of manufacturers. Production of chemicals has mounted so tremendously that a proportionate increase in handling capacity, has been required, with an accompanying decrease in manpower. It has been necessary, also, to store large quantities by utilizing overhead space.

Hazards in this work when done manually have been avoided; a critical manpower shortage has been averted; and costs have been reduced by the use of the electric fork-type lift trucks. These have enabled manufacturers to make the fullest use of the pallet system for rapid handling and, where necessary, for high tiering in warehouses.

LOW OPERATING COST

Always Desired . . . . Not Always Acquired

but in the Whitcomb locomotive you have an exception, for low operating cost is one of its prime characteristics. In designing this outstanding locomotive we get right down to fundamentals—no gadgets, no non-essentials. Plants in all lines have been users for years because their business positively requires efficiency and economy in haulage and switching service. The responsible executives have no worry in this respect. It will pay you to investigate.



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DIESEL, GASOLINE, MECHANICAL, OR ELECTRIC DRIVE — *The Products of a Pioneer*

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Manufacturers of Limestone Pulverizers, Gravel or Rock Crushing and Screening Plants, Conveying and Screening Equipment.

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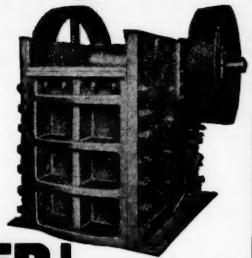

150 to 200 tons Per Hr. Crushing Steam Shovel Rock to 5" and 6" minus.

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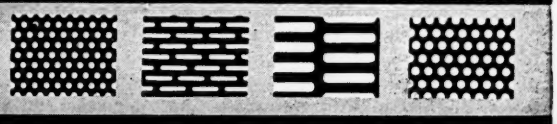
ANY METAL • ANY PERFORATION



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Manufacturers of Mitco Open Steel Flooring, Mitco Shur-Site Treads and Mitco Armorgrids.

Farm Implement Needs

(*Continued from page 47*)

duce overhead and rolling doors to farm buildings.

Understand, too, that the farmer of the future will have the choice of several alternate methods of doing his work and of handling materials of which his grandfather never dreamed. The post-war farmer will not wait upon the caprices of weather; he will not make hay only when the sun shines, but his haymow will be fitted with an industrial dryer. More practical inventions in this direction are certain.

No more will the strong-sinewed, sweating hired man pitch hay over the big beam, or even mow it away as it is dropped from slings or horse fork. The day will come when the efficient farmer will not put hay in the barn at all—he will put the barn over the hay. He will pick a palletized load of ten tons of loose, crushed, chopped or baled hay from a trailer with his yard crane, and swing a cover over the stack with the same equipment.

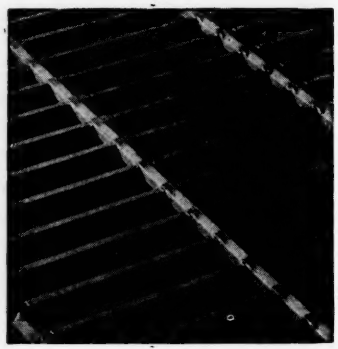
The next most important undeveloped line of potential farm equipment includes rural improvement machines: earth movers, bulldozers, stone-picking machines, tractor-mounted post hole diggers, tree-cutting portable power chain saws, air and electric tools. It will not be many years before either or both electric generating equipment and air compressors will be commonplace accessories of farm tractors. Electric drive will be a great convenience in the operation of farm machines. There are many air and electric tools now used in industry which with but slight modification could well serve a farm purpose. One can imagine a pneumatic hayknife, grub and garden hoes, an ax and wood-splitter. An air hose would be the ideal thing for cleaning combines and threshing machines and so preventing the spread of noxious weed seeds from one farm to another.

It should not be a great inventive feat to enlarge the electric handsaw to become a two-handled two-man tool for use with a tractor-mounted electric power unit, capable of cutting down small trees and trimming up the branches of fallen timber. Such tools as the Skilsaw, Thor, Stanley, Mall, and others of the circular saw type, and those of the Saw Gun design could be modified for outdoors and tree-pruning service.

A lot of folks still do not understand what the coming of the tractor and of electric power means to the farm. It means, of course, that the farmer can be in the market for all kinds of electric equipment and tools. For another thing, it means that the machinery repair and service building will be the farm's most essential element. The increasing use of self-propelled and tractor-mounted machines implies an increased need for hoists and cranes to handle this type of equipment.

In the not very distant future we will probably see designs of automotive farm machines having interchangeable power plants. Many farms now have an acute need for hoists to handle heavy tractor attachments, such as corn-pickers, and the lack of convenient lifting equip-

(*Continued on page 80*)



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Send for attractive paper-weight sample, which is yours for the asking. Catalogues upon request.

Square edge bars for safe footing.
Hexagonal cross bars for neat appearance.

Gary-Riveted Grating :: Gary Stair Treads

STANDARD STEEL SPRING COMPANY
Open Steel Floor Grating Division
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TRY FEDERATED *FIRST !*

With war priorities restricting the delivery of many non-ferrous metals, you may save a lot of time and energy by calling FIRST on one of America's largest smelters and refiners. Our sources of supply and facilities place us in an excellent position to satisfy your requirements promptly.

CALL ON US FOR

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- BRASS
- BRONZE
- ZINC
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- TYPE METALS
- LEAD
- DIE CAST ALLOYS

All of these in all commercial forms. Special Alloys to your specifications.

ATLANTA: 1410 Peachtree Street
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FMD *Federated* METALS DIVISION
AMERICAN SMELTING and REFINING COMPANY
120 BROADWAY, NEW YORK (5) N. Y.
Nation-wide service with offices in principal cities

MOVE MATERIALS FOR WAR AND PEACE IN *Fulton* WATERPROOF COTTON AND BURLAP PAPER LINED BAGS

In these times bag production is war production. Our plants have supplied millions of sand bags as well as various other items for use in combat areas. Behind the lines, supplies of food and other materiel are transported thousands of miles in bags specially designed to protect contents against hazards of rough handling, moisture and insects. Back here at home bags must move a long list of essential commodities ranging from small machine parts, through dozens of items of food, feed and produce to the hygroscopic chemicals requiring special waterproof packages. Many Fulton Waterproof Paper Lined Bags are replacing containers made of critical materials—metal drums, wooden boxes and barrels.

The output of our plants will continue to be devoted to these essential requirements until Victory itself is "in the bag."

FULTON BAG & COTTON MILLS

Manufacturers since 1870

Atlanta, Minneapolis, New York, St. Louis, New Orleans, Dallas, Kansas City, Kan.

Gates—Intake, Sluiceway and Spillway

Hydraulic Turbines — Francis and Propeller Types

Rack Rakes

Trash Racks

Valves—Pipe Line and Penstock

●

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

NEWPORT NEWS, VIRGINIA

HOW TO KEEP IN HOT WATER AND OUT OF TROUBLE!

● **Where it's essential to keep a steady supply of hot water, install the MARION GULF STREAM HOT WATER HEATER. Indispensable to hotels, office and apartment buildings, large institutions, and factories of all kinds where abundant hot water is essential and steam is available.**

Construction is simple. Water is heated faster through intimate contact with steam chambers adjoining. Internal parts float independently, avoiding strain from rapid contraction and expansion.

Low pressure steam is utilized with greatest economy. Inexpensive investment. Capacities range from 370 to 3700 GPH. Instantaneous type but can be used with storage tank.

Write Us Your Requirements and Let Us Solve Your Hot Water Problem!

THE MARION LINE

MARION MACHINE, FOUNDRY & SUPPLY CO.
Marion, Indiana, U.S.A.

LET MERCOID SOLVE YOUR CONTROL PROBLEMS

Pressure Control

NOTE THE FEATURES

MERCURY SWITCH
They cannot be affected by dust, dirt or corrosion; nor are they subject to open arcing, oxidation, pitting or sticking of contacts. They will give better control service and longer control life.

BOURDON TUBE
(Hidden back of cover)
The Bourdon tube is the actuating element of the control. It is the oldest known, tried and proven element, having been used in gauges for many years.

GLASS FACE
The glass face on the cover permits seeing the entire operation of the control in plain view. One can always tell whether the switch circuit is open or closed, a great convenience whenever servicing becomes necessary.

OUTSIDE ADJUSTMENT
The outside double adjustment with the calibrated dial and pointers is a convenient feature, making it very easy to set the required operating range, plainly visible on the dial. All guesswork is eliminated.

Mercoid Controls give 100% Mercury Switch Protection

MERCOID CONTROLS

FOR HEATING, AIR CONDITIONING, REFRIGERATION, AND INDUSTRIAL APPLICATIONS
THE MERCOID CORPORATION, 4201 BELMONT AVE. CHICAGO ILL.

Because of their Better Quality

LUNKENHEIMER VALVES

cost us LESS per Year of Service!

In buying a valve, as in buying anything else, it's *value* you're really after.

What is the measure of valve value? Length of service life, efficiency of performance, time and expense required for maintenance... these are the principal factors.

In these and in all other elements of value, Lunkenheimer Valves have proved their superior worth throughout American industry, in wartime as in peacetime. Maintenance men everywhere rely implicitly on these *better valves* because they know they are *better values—quality-built* in every detail, assuring longer and more efficient service with the very minimum of maintenance trouble and expense.

For Better Valve Values, Specify Lunkenheimer!

THE LUNKENHEIMER CO., Cincinnati 14, Ohio, U. S. A.
Offices: New York 13, Chicago 6, Boston 10, Philadelphia 7.
Export Department: 318-322 Hudson St., New York 13, N. Y.

Your LUNKENHEIMER Distributor

Lunkenheimer Distributors are located in the principal industrial centers. There is one near you fully equipped to assist with your maintenance and operation problems. Call on him.

BRONZE, IRON, STEEL, AND CORROSION RESISTANT ALLOY VALVES—
AIR DEVICES, LUBRICATORS, AIRCRAFT FITTINGS

Farm Implement Needs

(*Continued from page* 78)

ment has retarded the use of tractor-mounted equipment. It should be hardly necessary to point out that the farmer with a fleet of trucks, tractors and automotive farm machines will be a prospect for all types of garage and service station equipment, from grease guns and wrenches to air compressors and battery chargers.

Farmers, with but few exceptions, will not be in the market for the heavier type of materials-handling and construction equipment, and individual sales will not be large, but there will be a lot of them and they will be easy to make. But it is a mistake to imagine that the farmer will want small, weak, or cheap and inferior goods. The farm market is not a gadget market. The main farmer demand for materials-handling and lifting equipment will be in the middleweight capacity class. It is also a mistake to overlook the many smaller items of factory maintenance the man of the land and barns could advantageously use.

Here before me is a pile of the current industrial and commercial trade journals. Running through their pages, I noticed the advertisements of over eighty concerns that pictured potential agricultural equipment. Some things were big and others small; such a miscellaneous collection as:—steel shop furniture (work benches and feed trucks); stencil machines; safety ladder shoes; scrubbing machines (for dairy barns, poultry and hog houses); bag sewers and fastening machines (for use on combines); wire rope slings; safety hoist hooks; an electric car-puller (wagon spotter and stable cleaner); gear and wheel pullers—many others.

Let not the machinery-maker think that the farmer market is necessarily a small and troublesome side-line. Some very large companies have not found it so. There is Ford with his trucks and tractors. Allis-Chalmers have not found their agricultural adventure inconsequential. In all this maze of industrial advertising one sees a respectable list of names with which the farmer is already familiar: International Harvester; Farquhar; De Laval; Fairbanks-Morse; Allis-Chalmers; Cat-

(*Continued on page* 81)

Farm Implement Needs

(*Continued from page* 80)

erpillar Tractor; Food Machinery Co.; Continental Gin Co.; Sisal Kraft Paper, and others.

Understand, too, that the post-war farmer will deal in a price range far higher than that of his father, and in one that to his grandfather would have seemed incredible. Great-grandfather, with cogitation, fear and trembling, finally parted with fifty dollars for a new horse-drawn mowing machine, which he hoped would last for thirty years. His son, with almost equal doubts and fears, paid a hundred and fifty for a binder. But grandson takes the buying of five-hundred-dollar cornpickers and fifteen-hundred-dollar combines as all in the day's work —and he of the post-war generation of young farmers will not wiggle an eyelash over the purchase of five- to ten-thousand-dollar automotive farm machines. And this young man will often turn off a volume of work in an hour or two, sometimes possibly in minutes, that would have taken ox- and horse-using grandfather a week or more. A hundred years after the pioneer days of the "romance of the reaper", the last of the major crops, cotton and sugar, are just beginning to be mastered by machinery, and the mechanization of agriculture is still a lusty, growing infant industry.

SCREW MACHINE PARTS

from STEEL · BRASS · STAINLESS-STEEL

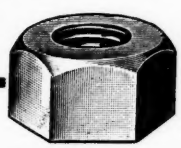
May we solve your screw machine problems?

SAMUEL J. SHIMER & SONS
MILTON, PENNSYLVANIA.

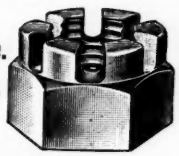
Hexagon Head Cap Screws — Hexagon Semi-Finished Nuts

Special Screw Machine Products
to blue print or sample.

MID-WEST SCREW PRODUCTS CO.



3664 Park Ave.
St. Louis 10,
Missouri



Crawford Sprinkler Supply Co.
ENGINEERS AND CONTRACTORS
Automatic — Sprinkler Systems
Heating, Boiler and Industrial Piping
Pipe, Valves and Fittings
P. O. BOX 28 EAST POINT, GA.

GALVANIZING
Have it done by Philadelphia's OLDEST, the Country's LARGEST
—HOT DIP JOB GALVANIZER—
Joseph P. Cattie & Bros., Inc.
Gaul & Letterly Sts., Philadelphia, Pa.
GALVANIZED PRODUCTS FURNISHED

STRUCTURAL STEEL for BUILDINGS and BRIDGES
Capacity 1000 Tons per Month. 3000 Tons in Stock
Carolina Steel and Iron Company
The Largest Steel Fabricators in the Carolinas
Greensboro North Carolina
S. C. Rep. Edward McCrady, 307 Allen Bldg., Greenville, S. C.

PENNSYLVANIA CRUSHER COMPANY
PHILADELPHIA 7, PA., Liberty Trust Building
New York - Chicago - Pittsburgh - Los Angeles
Reversible Hammer Mills
Impactors
Single Rolls
Granulators
Bradford Breakers
Bradford Hammermills
Log Washers
ALL HEAVY DUTY STEELBUILT

CONVERSE BRIDGE & STEEL CO.
Chattanooga, Tennessee
Structural Steel for all Industrial Structures, Buildings and Bridges
LARGE STOCK FOR IMMEDIATE SHIPMENT

Ornamental and Industrial
PERFORATED METALS
We carry a large stock for immediate shipment.
Send for Our Catalogue.
Manhattan Perforated Metal Co., Inc., 43-17 37th St., L. I. City, N. Y.

CANNING MACHINERY
FOR
FRUITS · VEGETABLES · FISH · ETC.
DEHYDRATING EQUIPMENT
A. K. ROBINS & CO. INC BALTIMORE, MD.
WRITE FOR CATALOGUE

MOUNT AIRY GRANITE
THE NORTH CAROLINA GRANITE CORP'N.
Mount Airy, N. C.

Inventor Joins Jack & Heintz

Nikola Trbojevich

Jack & Heintz, Cleveland, Ohio, recently made a valuable addition to their engineering staff by acquiring the exclusive services of the well-known mathematician, inventor and gear expert, Nikola Trbojevich. Mr. Trbojevich, a native of Jugoslavia and a graduate of the University of Budapest, came to the United States in 1914 to take a student engineering course with the Western Electric Co., and also to attend courses at Northwestern University. Deciding to stay in this country, he obtained a position as an engineer with the Illinois Tool Works, Chicago, which he held from 1915 to 1920, during which time he became a gear expert. Since 1920 he has been an independent inventor and consulting engineer, and has acquired over 60 U. S. and many foreign patents.

P.C.A. Appoints Managers

Appointments of five new station managers to serve at each of the North Carolina cities embraced in the Norfolk-Knoxville route of Pennsylvania-Central Airlines have been announced by J. H. Carmichael, PCA vice-president in charge of operations. The appointments were made in connection with PCA's preparations to resume daily air service over the Norfolk-Knoxville route on November 15. The new station managers and their assignments: D. T. Metzger, Elizabeth City; Leroy L. Gillen, Rocky Mount; Van O. Pilgreen, Raleigh-Durham; Denman C. Snow, Greensboro-High Point; and Alan Bland, Asheville-Hendersonville.

Marine Engineering Research Project

Waterman Steamship Corp., Mobile, Ala., has announced establishment of a research project in the engineering research divisions, Southern Research Institute. The program will include all phases of design and improvements of marine equipment and will be under the direction of E. N. Kemler, head of the division, and G. B. Clark of the Waterman research laboratory.

Rudolph Shrutting
ARTIST
Specializing in REALISTIC, HAND-DRAWN PICTURES OF INDUSTRIAL PLANTS
CHATTANOOGA, TENNESSEE
POST OFFICE BOX 1186

Albert Ramond & Associates, Inc.
Serving American Industry Since 1916
INDUSTRIAL ENGINEERS
Cost Reduction • Improved Wages
Production Management
Chrysler Bldg., New York 17 • Tribune Tower, Chicago 11
Russ Bldg., San Francisco 4 • 200 Bay Street, Toronto 1

MANUFACTURERS:
If you seek Pacific Coast sales representation for a meritorious item, write in detail to:
E. H. DAVEY
c/o L. H. Waldron Advertising Agency
Monadnock Building, San Francisco 5, Calif.

■ Inventions for Sale

MANUFACTURERS—Write for our FREE Classification Sheet of Inventions for Sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER CO., 578 Enright, St. Louis, Mo.

MANUFACTURERS—Need a New Product? You name it. We have it or can obtain it for you. No service charge of any kind. All type products. Use business letterhead. INVENTION REPORTER, 11106 S. Longwood Dr., Chicago 43, Ill.

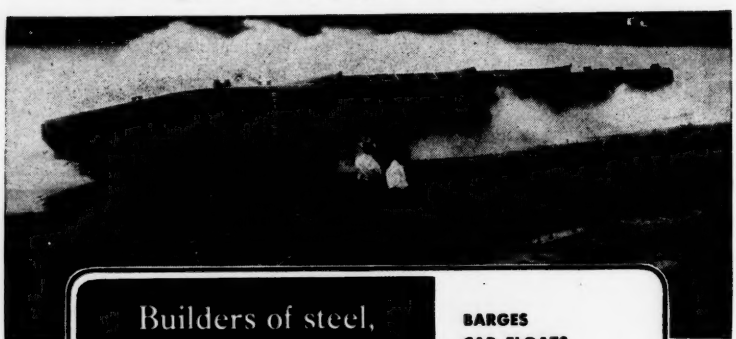
■ Patent Attorneys

PAUL B. EATON
PATENT ATTORNEY
1208-R Johnston Bldg., Charlotte, N. C.
514 Munsey Building, Washington, D. C.

■ Men Wanted

DRAFTSMAN
Concern doing national business requires draftsman with experience on industrial ovens and/or dust collecting systems. Permanent position assured to right man, with sales engineering future if desired. Give complete educational and experience history and send recent photograph. No. 9657, care of Manufacturers Record, Baltimore 3, Md.

All-welded sand barge of two sand compartments



Builders of steel, all-welded and riveted floating equipment for rivers and harbors.

BARGES
CAR FLOATS
PONTOONS
DERRICK HULLS
DREDGE AND TOWBOAT HULLS
STEEL DRY DOCKS
GATES
LOCKS

Ways at Ambridge, Pa., and Trenton, N. J.

AMERICAN BRIDGE COMPANY

General Offices: Frick Building, Pittsburgh, Pa.
Offices in New York, Philadelphia, Chicago and other principal cities
Columbia Steel Company, San Francisco, *Pacific Coast Distributors*
United States Steel Export Company, New York

AMERICAN BRIDGE COMPANY ★ USS STEEL ★ UNITED STATES STEEL

UNITED STATES STEEL

NOTICE

Change of Size

Starting with issue of January, 1946, the untrimmed and trimmed dimensions of both

MANUFACTURERS RECORD

and the

CONSTRUCTION Monthly

will be slightly increased to

Untrimmed ....8⅝" x 11¾"

Trimmed .....8½" x 11½"

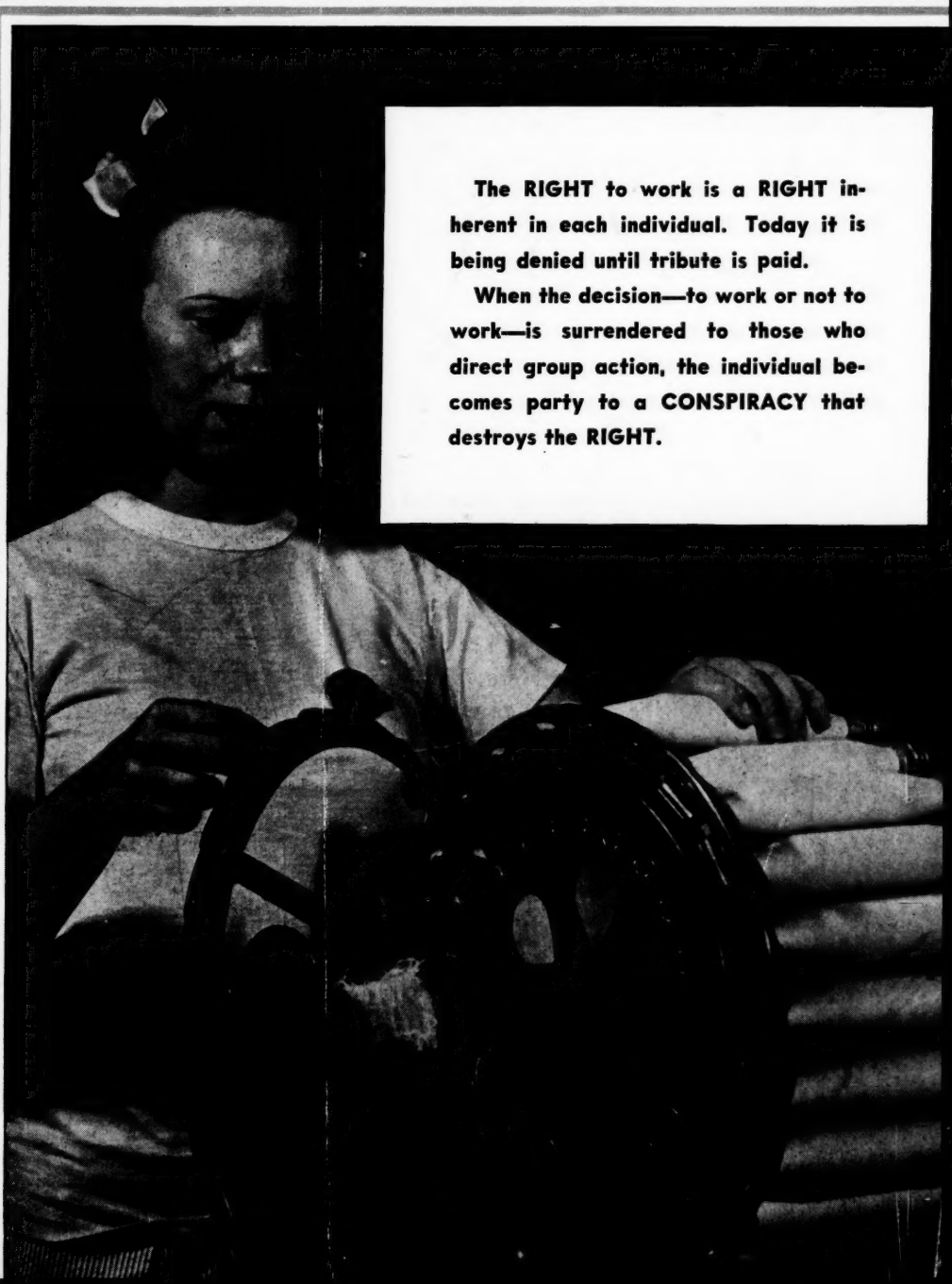
●

The type page will not be changed but will remain standard 7" x 10".

DEC 24 1945
ANGELES PUBLIC

MANUFACTURERS RECORD

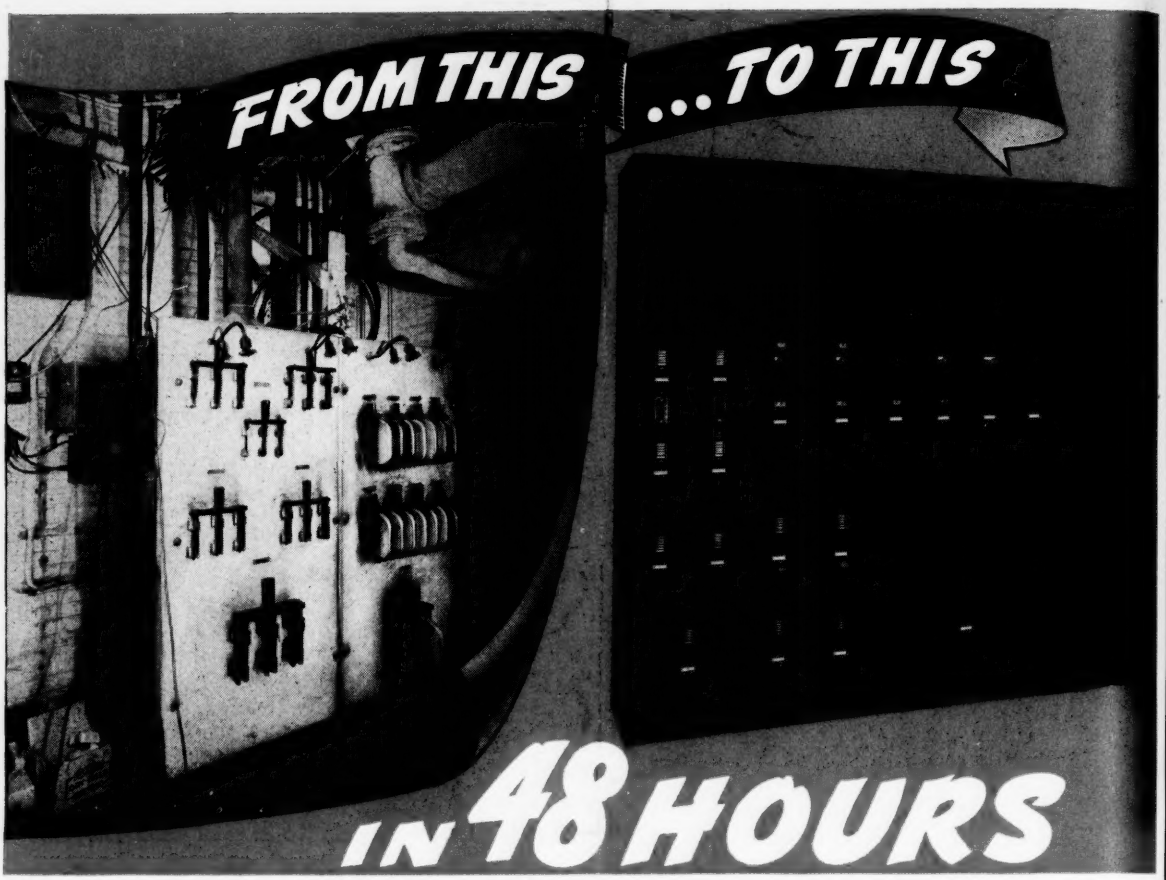
REFERENCE
DO NOT LOAN



The RIGHT to work is a RIGHT inherent in each individual. Today it is being denied until tribute is paid.

When the decision—to work or not to work—is surrendered to those who direct group action, the individual becomes party to a CONSPIRACY that destroys the RIGHT.

BER, 1945



INSTALLING a new switchboard doesn't have to be a big job. The Shaw Electric Company of Newark just recently made this interesting installation.

In addition to the old live face distribution switchboard there were four large cabinets housing the service equipment. Though this change-over was made while the building was closed, it is frequently possible to install a section at a time with only slight interruption of service.

Interesting, too, are the individual FA *SHUTLBRAK* switches embodying an entirely new switching principle, that of rolling contacts with a *faster-than-the-eye* shuttle motion within a completely insulated, damp proof chamber. Quality of performance and ease of operation actually *improve* year after year as the heavily silvered copper rollers move into position under line pressure contacts.

Frank Adam SHUTLBRAK switchboards have a full range of capacities from 30 to 1200 amperes, 250 volts AC or DC and 575 volts AC in 2, 3 and 4 poles. Write for the name of our nearest representative. He will be glad to answer your questions without any obligation.

Frank Adam Electric Co., Box 357, St. Louis, Mo.

FA SWITCHBOARDS

EST. 1891 — THE SIGN OF A BETTER JOB
Frank FA Adam
ELECTRICAL PRODUCTS
FRANK ADAM ELECTRIC CO. ST. LOUIS, MO. U.S.A.

Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT

THIS man is now a civilian in Knoxville, Tennessee. There are 28,000 others just like him who are coming back with newly acquired skills and trades to offer industry in the Knoxville area. Add to this, an existing labor supply of over 100,000, including 75,000 highly skilled atomic bomb workers in this area, and you have a giant pool to draw from—precision trained personnel in synthetics, electronics, chemicals, plastics, textiles, metal working, wood working, engineering and research—an endless array of crafts of almost every type and description. That's one reason why industry is choosing Knoxville as a site for new plants. No other section offers a more central location to men, materials and markets. Be sure to investigate Knoxville, Tennessee—home of cheap TVA electric power.

The FACTS You Want!

Write for the latest booklet outlining Knoxville's resources. If you prefer, Knoxville's competent industrial engineer will be glad to call on you and to prepare a confidential analysis for you. *Write or call: H. Bradford Jones, Power & Light Building, Knoxville, Tenn. Phone 3-1161 —no obligation.*

KNOXVILLE *offers you--*

- √**NATIVE - BORN skilled labor**
- √**CHEAP TVA electric power, gas and water**
- √**RICH resources**
- √**VARIETY of basic products**
- √**BETTER living**
- √**AMPLE transportation facilities**
- √**GATEWAY to mass markets**
- √**DIVERSIFIED agricultural products**
- √**EXCELLENT plant sites**

Eighteenth in a series of community development advertisements sponsored by the Junior Chamber of Commerce, Knoxville Utilities Board and other civic and business groups.

KNOXVILLE, TENNESSEE

Industrial Frontier Of The New South!

"The Manufacturers Record," published monthly by Manufacturers Record Publishing Co., 109 Market Place, Baltimore 3, Md. Entered as second class matter Baltimore, Md., under the act of March 3, 1879. Volume 114, No. 12. Single copies 25c.

CONCERNING ANOTHER SMALL BUSINESS WITH ROOTS IN ALUMINUM

Knifed in the middle by *Imagineering*

Price cutting like this is what America needs more of.

It came about when Lewyt Corporation, Brooklyn, teamed up with Alcoa to make something better and cheaper of aluminum by Imagineering... letting imagination soar, then engineering it down to earth.

• • •

In 1941, Lewyt landed a sizable order for an aluminum part for automatic pilots. It called for aluminum tubing, scarce at the time. Required much welding, and welders were hard to hire. Tough test "specs" ran rejections up to 40%.

"Need it be made of tubing as it always has been?" Lewyt engineers wondered. "Let's Imagineer with Alcoa. Maybe they can sock out impact extrusions for us."

Impact extrusions are made by bashing an aluminum disc so hard that the metal squirts up around the punch. A symmetrical, thin-walled shell, closed at one end, is produced. No impact extrusions as large as Lewyt needed had even been made.

After much nimble-witted Imagineering by Lewyt and Alcoa engineers, special tools were designed and built for the job. Then a big Alcoa press, the only one of its size in captivity, "socked out" the shells . . . 500 a day.

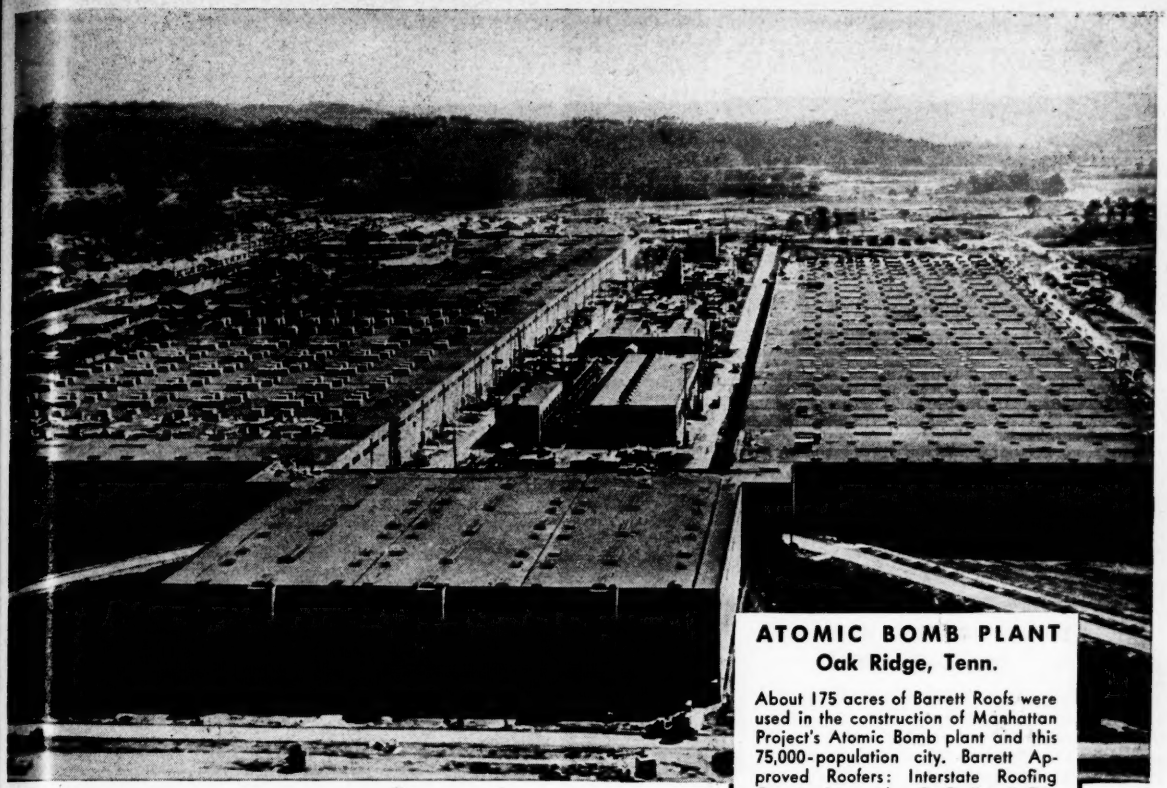
Lewyt's output jumped. Only one-sixth as much welding was needed. Rejections nose-dived. So did the price to the prime contractor . . . from $38.10 on the original contract to $18.85 on the final invoice.

• • •

Recognizing that America prospers only as small business prospers . . . providing additional jobs and opportunity for millions of workers . . . Alcoa stands ready to assist any manufacturer, large or small, in the solution of problems involving the use of aluminum. ALUMINUM COMPANY OF AMERICA, 2109 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN ALUMINUM

ALCOA ALUMINUM



ATOMIC BOMB PLANT
Oak Ridge, Tenn.

About 175 acres of Barrett Roofs were used in the construction of Manhattan Project's Atomic Bomb plant and this 75,000-population city. Barrett Approved Roofers: Interstate Roofing Co., Anniston, Ala., G. G. Ray & Co., Charlotte, N. C., and Tennessee Roofing Co., Knoxville, Tenn.

IMPORTANT AT IMPORTANT PLACES

. . . 7,620,000 sq. ft. of BARRETT ROOFS!

NEVER has the need for dependable roof protection been more clearly highlighted than in the construction and operation of the U. S. Government's Manhattan Project, at the Clinton Engineer Works, Oak Ridge, Tenn. For here, under direction of the War Department, the united efforts of science and industry culminated in the atomic bomb, the most potent military weapon and greatest scientific achievement in history.

In the vital race against time and the Axis, no delays or interruptions in production could be tolerated. Plant and equipment had to operate at complete efficiency *all of the time.*

Barrett is proud to have had a not unimportant part in this mammoth project. The 7,620,000 sq. ft. of Barrett Roofs applied at Oak Ridge constitutes one of the largest single orders for roofing materials in the history of the industry. It included 4,500,000 sq. ft. of Barrett Coal-tar Pitch and Felt built-up roofs, and 3,120,000 sq. ft. of Barrett Dublecote Shingles and other prepared roofings used principally for workers' homes, schools and stores.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N.Y.
2800 So. Sacramento Ave. Chicago 23, Ill. — Birmingham Alabama
In Canada: The Barrett Company, Ltd. 5551 St. Hubert Street, Montreal, Que.

Barrett

SPECIALIST
IN STEEL FABRICATION

It takes skill and experience to produce fabricated steel to fit the complex requirements of a bridge or a skyscraper. In 35 years of research and development, Ingalls has become a specialist in "tailoring" steel to exact specifications. From its three large modern plants, located at Birmingham and Pittsburgh, Ingalls has shipped thousands of tons of fabricated structural steel and plate work—cut and shaped to fit virtually every type of construction. The Steel Construction Company, an Ingalls subsidiary, is maintained to provide competent erection services when desired.

We take pride in our reputation built on ability to deliver a wide variety of steel requirements according to specifications and schedules at reasonable cost.

INGALLS
STEEL

THE INGALLS IRON WORKS COMPANY, THE INGALLS SHIPBUILDING CORPORATION, The Steel Construction Company, Birmingham Tank Company. Offices at BIRMINGHAM, New York, Washington, Pittsburgh, New Orleans. Fabricating plants at Birmingham and Pittsburgh. Shipyards: Pascagoula, Miss., Decatur, Ala.